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7 July, 1917.

Vol. XII.

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WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Truckee-Carson.

During the two-weeks period ending June 23, detailed work was performed as follows: Hogs in sweet clover pasture were dipped in crude oil mixture for mange and lice; sugar beets were irrigated, thinned and weeded; a hog fence was put up in plats H5 and 6; the corn and potato plats were irrigated and cultivated; gypsum was spread on plats as follows: D3, 700 lbs., D7, 800 lbs; E1, 500 lbs; E2, 500 lbs; E7, 500 lbs; and E8, 500 lbs.

All the sweet clover plats, and 5 of the poorer plats of alfalfa were mowed and stacked.

Experiments with Eelworm Infested Potatoes.— Badly infested eelworm potatoes purchased in the local market, were treated at various temperatures for varying lengths of time as shown in the table below. The treatments were given in an electric oven provided with a thermostat. Ten pounds of tubers were used in each lot.

The plantings were made May 10 and 11. The rows were 36 feet long, and there were 3 rows to each lot of seed. Germination counts made June 23, indicate that treatment at 30° C may be somewhat stimulating, and that treatment at 35° C and 40° C, even for short periods of time, is detrimental to germination. At the latter temperatures, it is noticeable that the vigor of growth as well as the germination is lessened.

Treatment	No. Row	Number plants ger- minated	Total plants in plat.
Untreated	1	23	73
	2	25	
	3	25	
30° C - 24 hours	1	28	85
	2	28	
	3	29	
35° C - 12 hours	1	24	65
	2	21	
	3	20	
35° C - 18 hours	1	26	69
	2	23	
	3	20	
35° C - 24 hours	1	20	60
	2	17	
	3	23	

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Field Notes.

Truckee-Carson (continued).

Table (continued)

Treatment	Number of Row	Number plants ger- minated	Total plants in plat
40° C - 6 hours	1	18	52
	2	17	
	3	17	
40° C - 12 hours	1	14	34
	2	13	
	3	7	
40° C - 18 hours	1	13	28
	2	8	
	3	7	
40° C - 24 hours	1	11	37
	2	14	
	3	12	

Experiments with Pig Pastured on Sweet Clover.- Nine pigs weighing a total of 340 pounds were put in sweet clover pasture on April 21. During the first four weeks, they were given 72 pounds rolled barley per week. During the 5 weeks beginning May 19 and ending June 23, they were given 65 pounds of barley, and slightly less than 8 pounds of tankage per week. During the period without tankage, 6.5 pounds of feed were required to produce a pound of gain, and during the second period, when tankage was included, only 2.3 pounds of grain were fed to produce a pound of gain. The results indicate the value of tankage in producing economical gain. The table below summarizes the results during the 9 weeks ending June 23:

	4 Weeks no Tankage	5 Weeks with Tankage
Total initial weight, pounds.....	340	384
Total final weight, pounds	384	542
Total gain, pounds.....	44	158
Value of gain at 7 cents.....	\$3.08	\$11.06
Daily gain, per cent.....	.44	1.00
Barley fed, pounds.....	288	325
Tankage fed, pounds.....	0	38
Grain per pound of gain, pounds.....	6.5	2.3

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Belle Fourche.

During the week ending June 30, the maximum temperature was 100, minimum 44 and precipitation .06 inch.

Irrigation of small grains in Field A and varieties in Field O was completed. During the week, oats in field P; oats and alfalfa in the New 80; the pasture plats in fields R and Q, and hog pastures in field K, were irrigated. Trees in the forestry were irrigated and one day was spent in irrigating the Park at Newell.

Beets in the irrigated rotations were hoed, blocked, and thinned, and potatoes and corn cultivated. Some cultivating was done in the dry land rotations and in the new rotations in D.

Alfalfa on dry land, grounds, ditch banks, and part of that in Field I was mowed.

A little time was spent by some of the men in hauling brush, hauling water to stock, and cleaning up.

NOTICE.

Assembling volume XI of the Weekly Bulletin for binding discloses the fact that we have not enough extra copies of a number of pages. In order that the required number of bound volumes may be made up, it is requested that field men send in as soon as possible their office file of this volume, covering the period January 1 to June 30, 1917. These will be replaced by bound volumes within a short time.

MISCELLANEOUS.

TELEGRAMS.Preparation and Dispatch

In memorandum No. 181 of the Office of the Secretary, entitled "Preparation and Dispatch of Telegrams" issued December 13, 1916, attention was directed to paragraph 43 of the fiscal Regulations of the Department, as follows:

"The telegraph must be used sparingly, and only when the delay in using the mail would be injurious to the public interests. Care should be taken to omit all unnecessary words. In a message from one employee to another, titles should not be used, and in a great many cases the name of the parties in both address and

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Minidoka.

The cattle of the Minidoka Project Cattle Grazing Association were rounded up during the week ending June 16. A general round-up of all the cattle on the sage brush range extending east of the project to American Falls and south of the Snake River to the Minidoka Forest was held at this time. The first drive from the outlying borders of the district failed to bring in approximately 15% of the cattle that had been turned out in April, the project herd being nearly one hundred short. Riders were sent to the outlying districts to bring all strays. When the range was left, these had not returned.

Many of the sheep on the range are being rebranded. The paint originally used was a patent brand guaranteed not to scour out of the wool. The frequent rains and the constant rubbing of the sage brush was causing all traces of the brands to disappear. A number were rebranded with the paint used for wood-work while others used the home-made branding fluid composed of linseed oil, flour and lamp black. In addition to the paint brands, most of the sheep in the cooperative bands are distinguished by ear tags.

One of the best registered Jersey cattle herds on the project was advertised for sale during the week. This was the third pure bred herd to be offered for sale this spring. The number of buyers was small and the bidding slow so that the sale was called off with none of the registered stock sold.

The withdrawn land bordering on Lake Walcott which is set aside as a Bird Reserve was gone over in company with Project Manager Dibble and Dr. Field of the U. S. Biological Survey during the week ending June 23. It was found that leasing this land to Project farmers for a cattle range would be more of a benefit than a detriment to the Reserve.

The Minidoka Irrigation District of the North Side is having difficulty in furnishing water to meet the needs of the farms. The late spring and the frequent rains are mostly responsible for the present conditions as but few farmers used irrigation water during this time. The additional acreage, approximately 10,000, was partly responsible. The sudden change to hot, dry weather made a demand for water that could not be supplied. Rotation is necessary. The water is being given to the grain and new seeding of alfalfa. Many of the farmers were greatly excited as their crops were burning in the fields. A big mass meeting was held in Rupert on this problem on Saturday night with the result that the ruling of the directors was upheld.

Some alfalfa hay is now being put up. It is a week or ten days earlier than usual but is being done in some cases because of the feed shortage, in others because of the impossibility of

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Minidoka (continued).

securing water for alfalfa fields.

The whey separator, recently installed in the Acequia Co-operative Cheese Factory, is proving satisfactory, securing a return of \$1.00 per thousand pounds of whey. At the present time this amounts to a little over \$2.00 per day.

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FIELD NOTES.

Yuma.

During the week ending May 19, eight steers of a total initial weight of 4,845 pounds were received for pasture on 4 acres of fenced Bermuda grass. This is really a worn out alfalfa pasture that is so badly infested with Bermuda grass that it is nearly a complete sod. These steers are a very even lot and of Holstein breed. It was desired to secure a beef type breed for this test but such was impossible as eight uniform animals of such a type could not be located on the entire project.

Several days of the week ending May 26 were spent among the cotton growers of the project in response to calls for suggestions relative to various cultural steps to follow. With three farmers about the project, cooperative thinning tests have been arranged with Pima and Yuma Egyptian and Durango cotton varieties. Also a cooperative planting of sweet sorghum varieties and Sudan Grass for seed production on the type of deep silt soil near Somerton has been arranged.

The fence about the north farm ditch was completed on Friday and thirty head of sheep placed in the enclosure to pasture on the Bermuda growing on the ditch bank. This flock is made up of 13 Tunis ewes and 17 lambs which are Tunis-Shropshire crosses. The total initial weight amounted to 2,300 pounds. These sheep have been rented for the entire season.

During the week ending June 23 the maximum temperature was 117, minimum 62 and greatest daily range 50.

Thirty-three acres were irrigated.

A wallow tank was set in the hog lot for hogs on grazing test. Bamboo plantings on A13-1 were pruned of frost-injured culms, and the Eucalyptus trees about the farm roads were pruned.

The eight steers on the Bermuda grass grazing test were weighed on the 20th. showing a total gain for thirty days of 515 pounds. With the gains valued at 8 cents per pound, this would be a gross return of \$10.30 per acre for the first thirty-day period. There was not a very large fill to be considered on these cattle as they were on good pasture before being placed on test.

Huntley.

The maximum temperature for the two weeks ending June 30 was 89, minimum 43, and precipitation .38 inch.

Very good growing weather has prevailed and all crops are making excellent growth.

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Field Notes.

Huntley (continued).

The first cutting of alfalfa was made during the week. This crop is rather light, having been damaged somewhat by late frosts and snow on May 30.

Pasture grasses in field L-III were given the first irrigation of the season.

Sugar beets are being thinned. A very uniform stand of beets was secured in all cases and practically no damage has been done by insect pests.

Mr. Scofield arrived at the station June 29.

San Antonio.

During the two weeks ending June 30, the maximum temperature was 100, minimum 57, and greatest daily range, 33. A light shower amounting to .04 inch came on Thursday evening. The last rain of any consequence was on May 20. The soil is very dry and all crops except cotton are suffering severely from drought. Cotton is still making satisfactory growth.

Oats on the rotation plats was threshed on June 21. The yields were extremely low, the highest being at the rate of 15 bushels per acre and the lowest at the rate of 4.5 bushels per acre. The oat selections in the tenth-acre plats on field C4 were also threshed. These yielded much better than those on the rotation plats. The best strain yielded at the rate of 33.7 bushels per acre. This is a good yield of grain under our conditions. Flax varieties were threshed on June 22. The stand of flax was so poor on all plats that the yields were very low. The highest yield was 3.5 bushels per acre, which was obtained on a plat seeded January 22. The estimated stand on this plat was 60 per cent.

Oat plats in the rotation experiments were plowed and plowing of the oat stubble on field C4 was started. The soil on the latter field, a part of which was pastured, is so dry that the plow was broken and plowing on this field has been postponed temporarily.

Another field of Sudan grass, used in the steer pasturing experiment, was fenced and the steers turned into the new pasture. All of the rotation plats and the roads and alleys were weeded. An effort is being made to kill out all the small patches of Johnson grass while the drought continues and conditions are favorable for such work. All of the small trees set in the orchards in the spring were watered. Watering was necessary in order to prevent their dying.

The corn on the rotation plats is drying rapidly and most of it is now past being helped by rain. Dwarf milo is ripening rapidly, that which germinated when first planted being fully ripe.

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Field Notes.

San Antonio (continued).

The late plants are now setting seed. The sorghum midge has not yet appeared in large numbers, and the milo is setting seed appreciably later than usual. Ordinarily, sorghum blooming after June 20 is seriously affected by the sorghum midge, which results in its failure to form seed.

NOTICE

SALARIES

Five and Ten Per cent Increase

Farm superintendents, not special disbursing agents, will take no cognizance of the increase in salaries, but will submit their pay rolls as heretofore. The increased pay will be computed and added in the Office of Records and paid from the special appropriation "Increased Compensation, 1918".

It has been decided by the Chief of Bureau that all unskilled laborers under appointment June 30 (except those whose appointments are limited as to time) will receive the increase. With those under appointment on a per diem basis, each case will be decided on its merits; but, as a general rule, employment twenty or more days each month will be considered "permanent employment".

It is to be understood that appointments made subsequent to June 30 do not carry the increase. This means, of course, that those whose appointments are terminated next fall will not receive the additional compensation upon reappointment in the spring.

Disbursing agents will pay the increase under a special warrant to be secured under the appropriation "Increased Compensation, 1918." Temporary labor, employed under letters of authorization, will not be entitled to the increase, whether in a pay status on June 30 or not.

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FIELD NOTES.

Shoshone.

On Friday and Saturday of the week ending June 23, 15 farmers delivered their wool at a warehouse in Powell for the purpose of cooperating in selling. The local buyers have been offering 44 cents per pound for wool and it was thought higher bids might be received by collecting it and looking for outside bidders. It is intended that each man's wool shall be sold separately.

The State Agricultural College was visited Monday and live stock problems were discussed with extension workers.

During the week ending June 30, 5 farm visits were made, 13 office calls were received and 14 other conferences were held.

A buyer for a wool commission firm of Boston made bids ranging from 46 cents to 50 cents per pound on the wool assembled by the project sheep growers and it was sold to him at those prices. He was the only large buyer who would come to the project to bid. He has for several years bought most of the large clips in this section. Some consideration was given to shipping to Billings but the three Billings buyers said that they could not pay more than that price.

A visit was made to the Huntley Experiment Farm regarding grass pasture tests, hog feeding tests and silo construction.

Boise.

The greater part of the week ending June 23 has been spent in soliciting members for the Boise Valley Cow Testing Association. So many dairy herds have been reduced or dispersed or are to be reconstructed in some way that it is difficult to secure large enough herds for the purpose of the association. At the present time there is no certainty that the association can be reorganized.

Mr. Scofield visited the project on Saturday.

Six herds of dairy cows were tested for butter-fat during the week ending June 30. The greater part of the time has been spent with the testing association. Herds including 434 cows have been subscribed to date, and it now looks favorable for the completion of the reorganization.

A car load of supposed dairy Shorthorns has just been received from some point in Missouri. These were expected to be somewhat above the ordinary and a trip was made on Saturday with County Agent Musser to inspect them. They are about the same kind of stock that has been shipped in from Central State points

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Field Notes.

Boise, (continued).

during the past few months, averaging very poor. Prices at which they are being sold range from \$250 to \$400 per head which would seem to be very exorbitant, considering the quality of the stock. This is not stock which was to be brought in by the Caldwell Commercial Bank representatives, but was brought in by outside speculators.

Uncompahgre.

The greater part of the week ending June 30 was spent in testing milk with the farmers. One hog feeding test was started on the farm of Frank Nash in which 11 Duroc hogs are to be fed grain on alfalfa pasture.

There has been some complaint from the local creamery regarding the marketing of butter. Much of the butter made on the Western Slope of Colorado is sold to the mining towns. There are several creameries that are trying to get into this market and are cutting the price of butter, making it rather difficult to keep the price of butter-fat up.

Much of the first cutting hay has been put up. The yield is very satisfactory this year.

Some time was spent in arranging a list of the premiums on live stock at the Western Slope Fair this fall. There have been some appeals for a live stock sale in connection with the fair. A few are interested in bringing in a few car loads of dairy animals for this purpose.

Minidoka.

Considerable hay was cut on the project during the week ending June 30. The yield is about average. There is much difference in different fields, those that were irrigated during the rainy season yielding much better than those that were not irrigated.

Some hay has been contracted at prices ranging from \$12 to \$15 a ton. Stockmen are slow in contracting at prices greater than \$12. On the other hand many farmers are planning on holding for \$20 a ton. Hence it is likely that contracting will be late this year.

Fat hogs are \$14, and spring lambs \$13 per hundredweight. Butter-fat is 38 cents.

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Field Notes.

Umatilla.

Mr. Jones reports as follows for the month of June:

"Many of the farm visits made during the month were of a follow-up nature, the purpose of each being to inspect the work done after consultation with this office. A number of the most progressive farmers about Hermiston, as well as new settlers, are adopting the border system of grading and irrigation where conditions are favorable for its use. On the West Extension, owing to a large area of gently sloping topography with rather shallow soil, it is particularly adaptable as well as essential to a means of quick irrigation and consequent prevention of water-logging. Reports from irrigators handling the water by this method indicate that the time of irrigation of fields by borders is reduced by at least one-half over the haphazard systems of "wild flooding". It is particularly desired that the new settlers on the West Extension be impressed with the necessity of using systematic economical methods of irrigation and a large percentage are laying out their tracts to render this possible.

"During June, 32 requests for assistance and instruction along reclamation lines were received and 57 visits to tracts were made.

"The Salt Lake conference was attended from the 13th to the 16th, inclusive. Stops were made enroute on the King Hill Reclamation Project, Idaho, and at Gooding, Idaho, to inspect methods of reclaiming sandy lands in these districts. In neither locality, and especially on the King Hill project, is one impressed with the fact that the irrigation of sandy lands is properly understood by the water users. Their distributing systems are not of adequate capacity or in suitable condition to utilize as large streams as will not erode the soil in rapid flooding, which is the principle to be followed in the irrigation of porous lands. On the King Hill project, the water is delivered to the individual tracts in small streams continuously, rather than by the rotation of large heads at intervals. This system has been proved a failure in the delivery of water to sandy lands on the Umatilla project."

Truckee-Carson.

During the week ending June 30, considerable attention was given to the establishment of a local farm labor bureau. This work is in cooperation with the state wide labor organization for Nevada, under the direction of the Department. Considerable assistance has been rendered already in this connection. When notice is given sufficiently far ahead, the Reno Free Employment Office of the Bureau of Labor is notified, and laborers are sent from that place to Fallon. Twenty-four hours time is sufficient

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Field Notes.

Truckee-Carson (continued).

to secure this labor from Reno. A bulletin board is maintained in the business part of town for posting notices of employment and labor.

The harvesting of the first crop of alfalfa is well started. Most of the hay will be in the stack by the end of another week.

Assistance was given in the selection of a registered Jersey bull to be imported into the Valley from California. The average production of the two nearest dams of this bull was 595 pounds of butter. He was purchased for \$125 at the age of eleven months.

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WESTERN IRRIGATION AGRICULTURE

FIELD NOTES.

Truckee-Carson.

The unusually hot weather of the two weeks ending July 7, has made rather frequent irrigation of the field necessary. The alfalfa was cut and hauled from all fields. The yield from 21 plats was 11% higher than from the same plats in 1916. The alfalfa yield of all plats outside the Y series was 2740 pounds per acre, and the yield of 12 plats in the Y series was 1360 pounds per acre.

In order to make a comparison of the relative value of sweet clover and alfalfa as pig pasture, 8 more Duroc-Jersey grade pigs were purchased and half of them put into the sweet clover pasture on C2 and 3, and the remainder in alfalfa on H5 and 6. At the same time, 4 of the 9 pigs that were in the sweet clover pasture were transferred to the alfalfa so that there are now 5 home grown pigs and 4 purchased pigs on the sweet clover, and 4 home grown and 4 purchased pigs in the alfalfa. The experiment has not progressed far enough to report results.

During the week ending June 30, the maximum temperature was 93, minimum 41 and precipitation 0.

During the week ending July 7 the maximum temperature was 99, minimum 49 and precipitation 0.

San Antonio.

During the week ending July 7, the maximum temperature was 101, minimum 68 and greatest daily range 30. A shower of .48 inch occurred on July 4. This was insufficient, however, to be of much value in increasing the moisture content of the soil.

Cotton on the rotation plats and on field C6 was cultivated after the rain; fallow fields were harrowed and cultivation of the orchards was started. The first cutting of Sudan grass from the rotation was hauled in. Tenth-acre plats of Dwarf milo, Early kafir, and Feterita were planted on field B4 on July 6. One man was employed the greater part of the week in pruning orchard trees. It has been necessary to keep the water going on the grounds almost constantly to keep the Bermuda grass alive and to keep the trees in reasonably good condition.

Belle Fourche.

During the week ending July 7, the maximum temperature was 93, minimum 47 and precipitation .10 inch.

WESTERN IRRIGATION AGRICULTURE
Field Notes.

Belle Fourche (continued).

Hoeing, blocking, and thinning of beets in the irrigation rotations and fields O and P, was completed.

Some hoeing and cultivating was done on the dry land rotations; corn, on the irrigated rotations was thinned, potatoes and corn cultivated, and corn and potatoes in field O was thinned and hoed.

Alfalfa varieties and field alfalfa in P; trees in the forestry; pasture plats in field R, and the garden and grounds, were irrigated during the week.

Alfalfa from fields A and I, and grounds, was mowed, hauled, and stacked and alfalfa from field P was mowed and raked.

A little time was put in by the men in cleaning up roads and alleys, repairing machinery, and caring for stock.

Mr. C. S. Scofield visited the station the latter part of the week.

MISCELLANEOUS

BICYCLES
Purchase of

In the past some difficulty has arisen through the purchase of bicycles in the field on letters of authorization. In the future such purchases should be avoided unless specific authority is contained in such letters. If emergencies arise where the purchase of bicycles is required in the field in order to carry forward any particular investigation, requests should be telegraphed to Washington and purchase not made until approval is secured.

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FIELD NOTES.

North Platte.

During the week ending June 2, a total of 165 hogs representing 4 herds, were vaccinated with the double treatment. A later report shows that only one shoat was lost following vaccination and this was on a farm where cholera occurred last fall.

Mr. McShane, the state garden supervisor, was in the valley during the week visiting the towns that are maintaining paid garden supervisors this summer. He reports the town gardens looking well in spite of the unfavorable weather that has prevailed.

An order for 40 spring farrowed Duroc-Jersey sow pigs was received from Laramie County, Wyo. The order was filled by 2 farmers. The price received for the pigs was \$15 each.

Pigs were weighed up for some of the pig club boys during the week ending June 9. Many of the boys who joined the pig club last spring are having considerable trouble getting suitable pigs with which to carry on their work, and it is probable that several of them will have to drop out on account of this. The pigs can be bought but many of the boys do not want to pay the prices asked.

One farm was visited on which a bunch of young pigs had been given the iodine treatment for sore mouth. While the disease was well advanced in some pigs at time of treatment all recovered after 3 treatments were given. One new case of sore mouth in pigs was found and treatment given. One farm was visited on which a larger per cent of the spring pig crop was lost with sore mouth through lack of attention on the part of the owner. It has been found that very few farmers recognize this trouble in pigs until the disease is well advanced, and then very few of them understand how to combat it successfully.

Considerable sickness among hogs has occurred this spring that we have not been able to diagnose. The conclusions have been that much of this trouble has been brought on by the damp and cold weather which has prevailed. But very little cholera is being reported.

Saturday was spent with Messrs. Farrell and Scofield visiting the western end of the project and in conference with Mr. Weiss, Project Manager.

Tieton.

The week ending June 16 was spent on the Boise project and at Salt Lake City.

On the Boise project the cooperative and privately owned creameries and cheese factories were visited and studied. Par-

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DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton (continued).

Particular attention was given to form of organization, methods of paying for butter-fat, relation of prices paid by private and cooperative companies for butterfat, butter, and cheese making, some details of equipment and construction of factories, methods of hauling milk and cream, methods of hauling whey and the use of whey on the farms.

Twenty-two farms were visited during the week ending June 23; 13 calls for assistance were answered by farm visits and 3 office conferences were held. By request the meeting of the Cowichee Boys' Dairy Club was attended and a short talk was given to the 9 boys attending. One day was spent with Dr. Martin, Deputy State Veterinarian, in administering the tuberculin test to the two project herds belonging to Messrs. Hart and Joos, now at McAllister Meadows in the Tieton River Basin supplying milk to the Reclamation Service camp.

Practically all the hay on the project was cut during the latter part of the week ending June 16 and during the week just ended. The warm weather increased the hay crop beyond previous expectations and was ideal for curing. There is an increased amount of work exchanged between neighbors due to the scarcity of dependable labor.

Thirteen farms were visited during the week ending June 30. One day was spent with Dr. Martin in making inspection of the two herds at McAllister Meadows which were given the tuberculin test on Saturday. No reactors were found in the 37 head tested.

Mr. Scofield spent Thursday on the Tieton and Sunnyside projects.

Prices remain practically unchanged from those last reported except that the quotation for prime pigs has fallen to \$14.25 in sympathy with declines in the coast markets. A few sales of alfalfa hay are reported at from \$10 to \$15 per ton baled. The Hay Growers' Association seems insistent in holding for \$15. Hay baling outfits have advanced the cost of baling from \$2 or \$2.25 per ton to \$2.50 to \$2.75.

The new cooperative cheese factory is progressing satisfactorily except that the firm from which the milk cans were ordered have had difficulty in securing the cans. They expect to make delivery about the 10th of July.

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Boise.

The greater part of the week ending July 7 has been spent on the cow testing association work. The required number of herds containing practically 500 cows has been secured and a reorganization meeting called for Friday of next week. At this time there is no one available to serve as tester for the association and it is not known where a man can be secured for the salary which the association is able to pay. The association contains 33 herds, 14 of which will be tested in combinations of two. Practically one-half of the members of the association are new.

The sale of live stock was attended at the regular trader's sale in Caldwell on Monday. Prices were extremely low on both cattle and horses, the latter being in no demand whatever and cattle selling for less than beef prices.

A small bunch of hogs was weighed on a farm near Boise on Saturday, for a feeding test in which the hogs, averaging about 140 pounds, will be put on full feed of wheat and skim milk with probably some tankage. The wheat will cost \$3.50 per cwt.

A serious break occurred in the New York canal. The water has had to be turned out and about a week will be required to repair the break. The loss will be considerable. The weather is unusually warm and many fields are suffering.

Two carloads of Shorthorn cattle arrived from the Central states this week imported by a dealer who is being backed by the Caldwell Commercial Bank. Cows in this shipment are only ordinary, but average very much better than those imported a week ago by other parties. The shipment included 3 bulls which are very creditable animals, being among the best ever brought into the state. These are two or three years old and will have to sell \$1000 and \$1250. The plan of the Commercial Bank is to have these bulls placed in communities where the cows are sold and used by associations.

Uncompahgre.

Arrangements have been made during the week ending July 7 for a meeting of farmers in the Olathe district for the purpose of discussing the formation of a bull association. Several farmers have been talked with during the week and considerable interest is manifested.

Several meetings of committees interested in the Fair at Montrose this fall, have been attended during the week.

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Field Notes.

Uncompahgre (continued).

Requests are coming from farmers for a sale of live stock during the Fair. At present it would appear that the sale could be made a success, especially from the standpoint of range bulls. The arrangements in detail have not been made.

Twenty-five Ramboulet rams have been purchased recently by Project farmers. Six ewes were also purchased.

The commissioners of Montrose County voted to employ a County Agent, Monday of this week. The agent will probably be appointed to start work in January. Delta County Agent arrived to take up his duties July 5.

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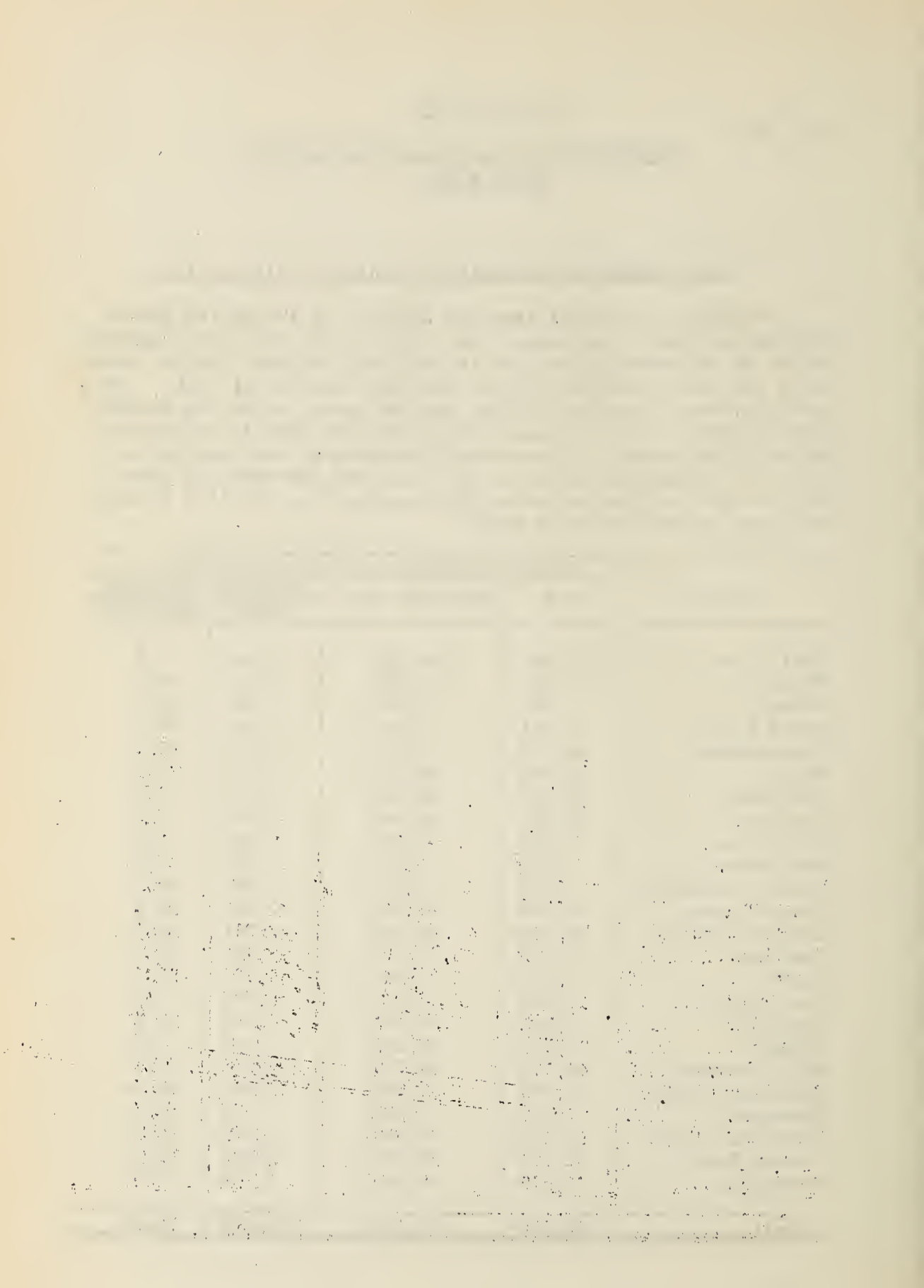
DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

CROP ACREAGES ON RECLAMATION PROJECTS, 1916 and 1917

Information received from the Director of the United States Reclamation Service indicates that the area of crops to be harvested on the Reclamation Projects in 1917 will be about 120,000 acres, or 14 per cent, greater than the harvested acreage of 1916. The total harvested area in 1916 was 856,566 acres, while the preliminary estimates of the present year place the area to be harvested at 976,000 acres. The acreage harvested on each project in 1916, the estimated acreage of 1917, and the increase, in acres and per cent, of the estimated 1917 acreage over the 1916 acreage, are given in the following table:

PROJECTS	HARVESTED ACREAGE OF IRRIGATED CROPS.			
	1916	ESTIMATED 1917	ESTIMATED INCREASE	
			ACRES	PER CENT
Salt River.....	173,359	185,000	11,641	7.0
Yuma.....	28,283	35,000	6,717	24.0
Orland.....	7,011	10,000	2,989	43.0
Grand Valley.....	1,561	5,000	3,439	220.0
Uncompahgre.....	48,352	58,000	9,648	20.0
Boise.....	72,581	80,000	7,419	10.0
Minidoka.....	81,362	90,000	8,638	11.0
Huntley.....	18,581	20,000	1,419	8.0
Milk River.....	4,592	7,000	2,408	52.0
Sun River.....	4,700	5,000	300	6.0
Lower Yellowstone	6,020	8,000	1,980	33.0
North Platte.....	74,766	85,000	10,234	14.0
Truckee-Carson....	38,249	45,000	6,751	18.0
Carlsbad.....	14,500	16,000	1,500	10.0
Hondo.....	1,219	1,000	- 219	-18.0
Rio Grande.....	61,818	65,000	3,182	5.0
Umatilla.....	3,900	5,000	1,100	28.0
Klamath.....	29,351	30,000	694	2.0
Belle Fourche.....	46,909	55,000	8,091	17.0
Strawberry Valley	25,066	30,000	4,934	20.0
Okanogan.....	5,242	6,000	758	14.0
Sunnyside Unit...	59,449	75,000	15,551	26.0
Tieton Unit	21,000	25,000	4,000	19.0
Shoshone.....	28,695	35,000	6,305	22.0
Totals.....	856,566	976,000	119,434	14.0



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DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

WOOL PRODUCTION IN THE UNITED STATES

According to figures published in the Monthly Crop Report for February, 1917, the estimated annual wool production in the United States during the past 23 years has varied from 259 million pounds in 1897 to 328 million pounds in 1909. There has been a slight increase in production during most of the period, but there have been wide annual fluctuations. When the estimated production is stated by 5-year periods, a slight increase in the average annual production up to 1913 is shown, but, as indicated in the following table, there has been a rather marked decline during the past 3 years.

PERIOD	LENGTH OF PERIOD, YEARS	ANNUAL PRODUCTION (Millions of Pounds)			AVERAGE ANNUAL PRODUCTION PER CENT
		AVERAGE	HIGHEST	LOWEST	
1894 to 1898	5	281	310	259	100
1899 to 1903	5	293	316	272	104
1904 to 1908	5	299	311	292	106
1909 to 1913	5	314	328	296	112
1914 to 1916	3	288	290	285	103

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

COMMUNITY SHEARING PLANTS.

Under date of July 9, the following letter was addressed to the Animal Husbandry Division of the Bureau of Animal Industry by Mr. Farrell:

"As Mr. Scott probably has told you, we paid a good deal of attention to the problems of sheep production on irrigated lands at our recent Salt Lake field meeting. One of the questions which was brought up had to do with community shearing plants. It was pointed out that at present there is comparatively little cooperation among irrigation farmers with reference to the various enterprises of sheep production, although a beginning has been made on several of our projects in cooperative marketing, particularly of wool. It was pointed out that the present shearing practices in which, for the most part, individual farmers shear their own sheep without reference to those of their neighbors, are susceptible of considerable improvement, particularly in the matter of wool grading. The question was raised as to whether it would be feasible for communities of irrigation farmers to operate community shearing plants at which shearing and wool grading could be carried on uniformly as to time and method.

"We were not sure whether such a practice would be feasible. It seemed to us that it is desirable to have, with reference to cooperative shearing plants, information similar to that which we now have with reference to community cheese factories, for example. We now know very definitely the requirements for the successful operation of a community cheese factory. We know the minimum supply of milk, the maximum area in which the supply must be furnished, the cost of factories for milk supplies of different sizes, and other similar information. We felt that if we had similar information regarding community shearing plants it would be helpful to us in promoting the sheep industry on our irrigated lands.

"I would be glad to hear from you at your convenience regarding this matter and to discuss it with you at any time you wish. If you feel your division should make an investigation of the question, we shall be glad to have our field men cooperate with you in any possible way in securing the necessary information."

Mr. F. R. Marshall, in Charge of Sheep and Goat Investigations replied as follows under date of July 17:

"Replying to your communication of the 9th instant, and in further consideration of the points mentioned in our conversation,

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Field Notes.

Community Shearing Plants, (continued).

I am decided that it would be unnecessary to undertake the construction of a cooperative shearing shed for use of the flocks on the Reclamation projects.

"Of course, most of the farmers resident there are accustomed to seeing the shearing done by outside shearers and in large numbers. However, there is no difficulty in doing this work at home. A good deal of driving would be saved and this would prevent difficulties arising from uncertain weather, as with flocks of fifty or sixty ewes it would be possible to confine them almost any night and hold them for shearing the next day.

"The main difficulty that might accrue through having the community flock shorn at one place would be in the handling of the wool. With our arrangements for selling in the West as they are likely to continue for some time, I believe that good results could be obtained by having the flock owners instructed as to the assembling of bags, use of proper twine, method of tying, etc., after which the wool can be assembled and graded and pooled, just as would otherwise have been done at the shearing shed. This handling of the wool can be done in an ordinary warehouse or temporarily engaged quarters, with no material cost, while the construction of a shed and wool house would call for a considerable expenditure that could at best be used only during a small part of the year."

It is requested that the fieldmen send in their opinions on this matter, together with any information bearing on the question which they are able to secure from time to time.

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WESTERN IRRIGATION AGRICULTURE

FIELD NOTES.

Yuma.

During the week ending June 30, the maximum temperature was 109, minimum 56, and greatest daily range 47.

Twenty-seven acres were irrigated.

The Colorado River at Yuma has stood at high flood mark during the entire week with an increasing discharge now of about 135,000 second-feet. As the river has stood at flood stage for at least twenty days the lowlands near the levees subject to seepage are now beginning to seep quite badly. At the present date, however, only a very small acreage of crops has been killed by seepage. All levees are in good condition, while the local Reclamation Service are exerting great effort to be prepared for any cutting away of levees at the most exposed points. Reports confirm the belief that the river will continue at high flood stage for at least another week.

Cultivating and hoeing continued to demand a great deal of the time of all laborers.

Alfalfa was harvested on fields C36 to 38 and flax was harvested and threshed from fields A10-5, A-13-2 and D-14.

Grain sorghum varieties were planted on plats C7 and D27.

The sheep being grazed on the Bermuda grass banks of irrigation ditch were weighed after having been on pasture 30 days showing a gain of 260 pounds, which figured at 13 cents, gives a gross return for 30 days of \$33.80 for pasturing on 1/2 mile of ditch.

Results of Hog Pasturing During Spring Period.

The spring bunch of hogs being carried on alfalfa pasture and a two per cent grain ration were weighed out and marketed this week. This grazing test was begun on March 1, on borders E7 and 8. There was used as pasture three-quarters of an acre of Peruvian alfalfa which had been seeded in November, 1914. The pasture was fenced in two equal divisions and pastured alternately. Sixteen shotes of good grade Duroc-Jersey stock were used. This herd was a very even running bunch of pigs having an average initial weight on March 1 of 57.9 pounds each.

In connection with this test there was planted on adjacent plats three-quarters of an acre of barley which was to be hogged down when grain was nearly mature. The hogs were turned on the barley pasture on May 19 and left for 1 week, also with access to the alfalfa pasture, but no grain ration was fed. However they could not be induced to eat much if any of the grain, and for this seven-day period they sustained a total loss in weight of 84 pounds.

Forty-eight pounds of condiments, consisting of soft coal, rock salt and rock phosphate, was eaten by this bunch of hogs during the

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WESTERN IRRIGATION AGRICULTURE
Field Notes.

Yuma (continued).

entire 120-day period of pasturing, in these calculations has been figured at a value of 3 cents per pound. A summary of the returns for the 120-day period is given below:

Periods	Net returns per acre	
	Hogs 7 cents grain at 1¢	Hogs at 13 cents grain at 3.5 cts.
March 1 to 29, 28 days.....	\$14.80	\$15.49
March 29 to April 26, 28 days.....	23.46	28.03
April 26 to May 26, 30 days.....	15.67	13.49
May 26 to June 29, 34 days.....	30.13	26.56
March 1 to June 29, 120 days.....	\$84.06	\$83.57

From these results it may be of interest to note the very small difference of net returns per acre between calculations based on pork gains at 7 cents per pound and grain at 1 cent per pound, and those based on pork gains at 13 cents per pound and gain at 3.5 cents per pound. By the use of actual market conditions at present, gains should be figured at 12 cents per pound and grain at 3 cents per pound. On this basis the net returns per acre would be \$87.57.

Attention might also be called to the growth of these hogs during different weeks of high temperatures as indicated during the weeks June 9, 16 and 23.

	Week ending		
	June 9 No Wallow	June 16 No Wallow	June 23 Wallow
Maximum temperatures:			
Average daily maximum.....	98.6	105.4	110.2
Sunday.....	97	105	117
Monday.....	94	99.5	112
Tuesday.....	95	96	111
Wednesday.....	98	101	108
Thursday.....	99	108	108.5
Friday.....	102	113	109
Saturday.....	105	115	105
Pounds of grain fed.....	269.5	287	294
Total pounds gain.....	102	26	119
Pounds grain per pound gain.....	2.642	11.03	2.47

WESTERN IRRIGATION AGRICULTURE
Field Notes.

Yuma (continued)

The handling of the hogs during the first two weeks mentioned was identical with previous treatments. During the week ending June 23 the hogs were provided with a wallow tank which may account for the much better gains for this week as temperatures were even higher than during the previous week.

San Antonio.

During the week ending July 14, the maximum temperature was 106, minimum 67, and greatest daily range 34. The warmest weather so far this season was experienced. There was very little wind movement, which made the hot weather more disagreeable. There has been no rain and no relief from drought. Corn is drying out rapidly and harvesting will soon be possible. The total precipitation since January 1 has been 6.09 inches.

Cultivating of cotton was completed early in the week. The remainder of the orchards were cultivated. Milo on the rotation plats was harvested. Soil samples were taken on the cotton and milo plats in the rotation experiments. Some weeding was done. The steers were removed from the Sudan grass pasture on July 10 and placed in the dry lot. All of the grass has been eaten and owing to dry weather has been making practically no growth for several weeks.

Scottsbluff.

During the week ending July 14, the maximum temperature was 95, minimum 50, and precipitation 0.

Notwithstanding the fact that the crops in this section are backward, due to the late spring, they are, as a rule, looking good. Labor is very scarce, as a consequence of which many of the beets were late in being thinned and much of the alfalfa was not cut until a week or ten days later than it would have been had help been available. The hay that has been harvested was put in the stack in very good condition.

Most of the crops on the farm looks good. Alfalfa has been cut and put in the stack in good condition. Beets have been thinned and most of them have received the second hoeing. The small grain is being irrigated the second time.

The fencing of the 800-acre pasture was commenced but as it was not possible to get sufficient help to do the fencing and the farm work, the fencing has been stopped for the present. This fencing will, however, be completed as soon as help can be spared from the

WESTERN IRRIGATION AGRICULTURE
Field Notes.

Scottsbluff (continued).
farm work.

The painting of the dwelling buildings has been completed.
The farm picnic will be held on August 8.

Belle Fourche.

During the week ending July 14, the maximum temperature was 100, minimum 53, and precipitation .03 inch.

The season to date has been very dry and rain is needed badly to help the dry land crops.

During the week, irrigation of alfalfa, small grains, corn, and potatoes in field A; grain varieties and potatoes in field O; oats in field P, and oats and alfalfa in the New 80 acres, was about finished. Some parts of the forestry were irrigated with the use of the pump.

The last of first cutting alfalfa from field P and miscellaneous cutting about the farm, was hauled in and stacked.

Throughout the week, plowing was done on the dry land rotations, cultivating was finished, and on the irrigated rotations, beets and corn were hoed, and potatoes and corn cultivated. Some cultivating and hoeing was done on the new dry land rotations and in other fields on the dry land.

A little time was put in on fence, cleaning up rubbish, hauling water for stock, and work was started on the foundation of the new house.

Preparations are about completed for the 3rd annual Farmers' Picnic to be held on the station, July 21.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

North Platte.

During the week ending June 23, second weights were taken on a bunch of Hampshire shotes on the farm of H. H. Spencer. Another feeding test was started with Mr. Spencer in which 34 spring Hampshire pigs will receive a 2 per cent ration of grain on alfalfa pasture.

On Friday, the County Agent from Kimball County, Nebraska, was assisted in purchasing pure bred shotes from swine breeders on the project, for use in pig club work in that county.

On Saturday a bunch of 25 hogs in the vicinity of Scottsbluff was vaccinated for cholera. A late report from the herd indicates that none of the vaccinated hogs died, while 7 unvaccinated hogs were lost.

In the June number of the Journal of the American Veterinary Medical Association, is a very interesting and valuable article entitled "Hog Cholera Transmission Through Infected Pork," that will be of interest to all field men engaged in swine production work. The same number of the journal contains several other very interesting articles.

On Monday of the week ending June 30, a bunch of 90 spring pigs were given the double treatment for cholera, and on Thursday another bunch of 110 head were given similar treatment. A late report from both herds indicates that no losses occurred following treatment.

Cholera was found on a farm east of Scottsbluff on which the hogs had been fed kitchen wastes from a restaurant in Scottsbluff. It is thought that this herd contracted cholera through the pork trimmings in the garbage, as this is a possible source of cholera as pointed out in a recent article in the Journal of the American Veterinary Medical Association. No other cases of cholera have been heard of in that locality.

On Wednesday a visit was made to the farm of J. G. Woodman, who has been using a pit silo since last fall. He is especially well pleased with the results secured from the silo. Mr. Woodman is one of the oldest dairymen on the project, and milks from 5 to 10 pure bred Jersey cows. Thus far he has not attempted to grow any irrigated pasture but keeps his cows in a dry lot the year around.

A number of the pig club boys were assisted in weighing their pigs for the pig club work which must start by July 1.

Breaks occurred in 2 large laterals on the eastern end of the project, making it necessary to cut off the water for 2 days in each case. Many farmers are complaining that they are not getting enough water.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

North Platte (continued).

One bunch of young pigs was treated for canker sore mouth during the week ending July 7. Three herds were vaccinated, one of them being slightly infected with cholera at time of vaccination. A late report from the herd shows that none of the 27 vaccinated hogs were lost. The two other herds were given the double treatment with good results.

Two days were spent visiting farms on the project in company with Mr. Link, potato specialist from the State University. According to the Reclamation Office on the project, there are 5,003 acres of potatoes on the project this year as compared with 1,735 acres in 1916, an increase of 188 per cent.

A break occurred in the Tri-State canal during the week, making it necessary to shut off the water for 3 days. Again on Saturday it was necessary to shut the water out of the canal following the discovery of the fact that the dam across the river was in danger of being swept away due to being undermined for a space of 100 feet in the middle of the dam. The outlook is especially serious for the farmers. It is doubtful if the dam can be repaired this summer so as to allow a full head of water to enter the canal.

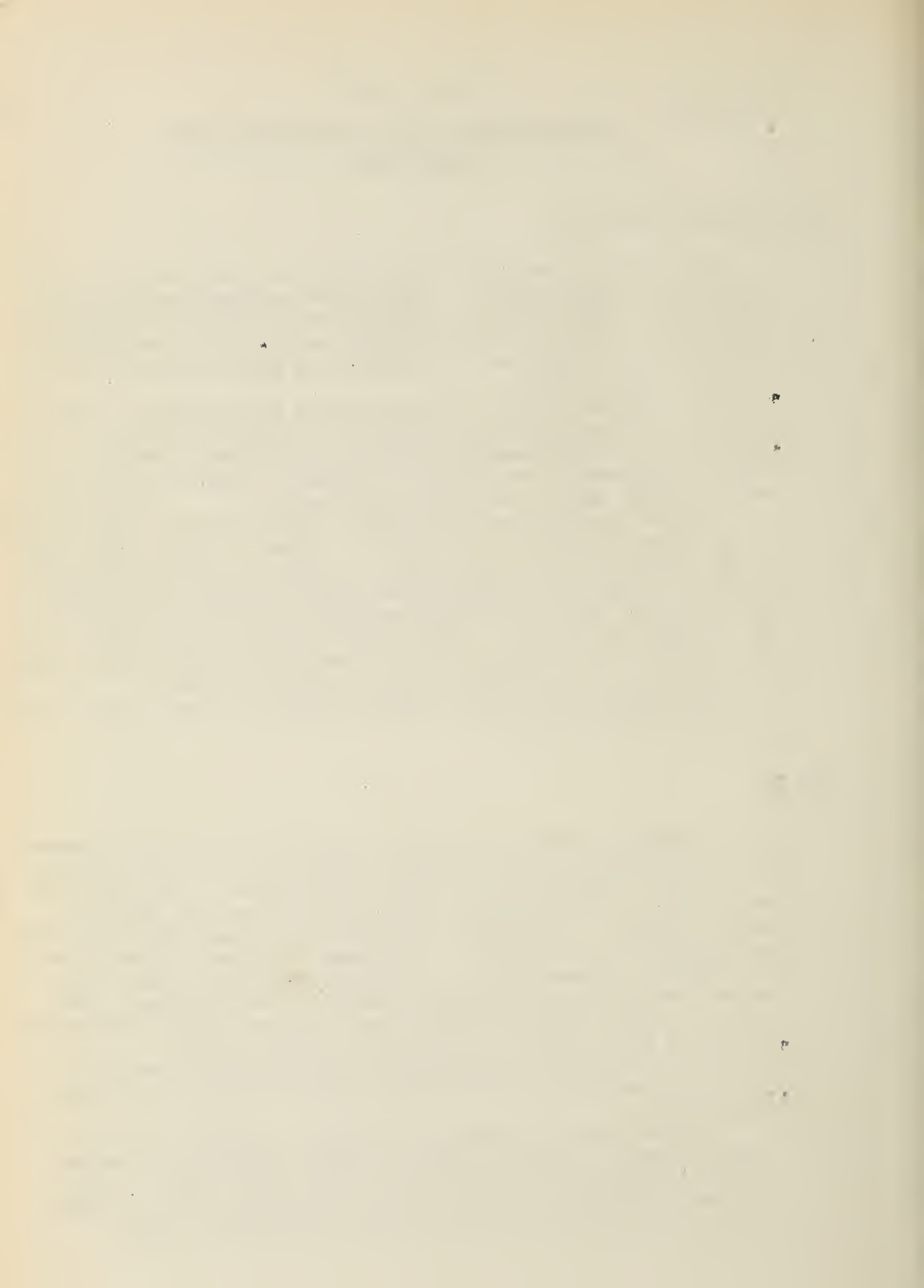
Twenty three farm visits were made during the week and 20 calls for service were received.

Minidoka.

Indications during the week ending July 7 were that the demand for pure bred rams will be greater in the case of the long wools and the fine wools than that of the middle wools. The demand for range rams of this breeding is better in this section than for a number of years. All pure bred long wool ram lambs are contracted for September first delivery. The demand for Rambouillet is not yet supplied as, owing to the past demand for mutton rams, there are but few pure bred Rambouillet flocks in this district. As yet none of the pure bred Hampshires have contracted locally although there have been a number of calls from outside points.

In the opinion of the sheepmen, the high price of wool is giving the long wool and cross bred sheep a preference over the middle wools.

Long wool lambs, to weigh 100 pounds on September 1, have been contracted at prices ranging from \$10 to \$17.50 for the unregistered stock and from \$25 to \$40 for the registered. Pure bred but unregistered Hampshires are being held at \$25 and registered stock at \$35 with individual rams at from \$50 to \$75.



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DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Minidoka (continued).

Hay is being held at \$15 in the stack but contracting has stopped.

Throughout the Minidoka project and the Twinn Falls Tract, there is a noticeable interest in improved cattle. Because of the shortage of hogs on the farms, there is a demand for well bred calves to consume the skim milk. In the cheese factory districts there are many calves for sale but only from the poor cows. The calves from the best cows are held by the owners who refuse to price them. One farm asked from \$25 to \$50 for grade dairy calves one week old. A call for a shipment of well bred calves on the Minidoka is as yet unfilled.

During the week ending July 14 the project was visited by a committee of farmers, accompanied by the county agent of Power County to study the pasturing systems and the methods of handling sheep on the farms with a view to attempting the same in that district.

The extreme hot weather and hot winds of the past ten days have almost destroyed the possibility of a crop of spring grain on the dry farms. Fall grain was injured to some extent. Some of the irrigated crops were badly damaged by the same causes.

Truckee-Carson.

Considerable attention has been given, during the two weeks ending July 14, to answering complaints due to the loss of turkeys from disease. Approximately 2,000 turkeys have been lost in the Stillwater section alone. Two individual flocks have suffered a loss of 1,000 turkeys. Several specimens have been sent to the University of Nevada for diagnosis. The evidence so far indicates blackhead infection (Enterohepatitis). In one flock where a loss of two hundred turkeys was sustained, fowl cholera was found in addition to blackhead infection. Up to date the loss of turkeys has been confined to the eastern part of the project. Dr. Lockett, of the State Disease Control Office, is spending considerable time on the project now in connection with the turkey disease.

The turkey growing experiment in cooperation with the Bureau of Animal Industry is progressing nicely. The young turkeys have been divided and placed in the 3 different feeding lots where they will remain until maturity. There are two lots of fifty turkeys each and one lot of thirty five.

Practically all the first cutting of alfalfa hay is now in the stack. The average yield was reported to be considerably above normal. Some feeding contracts have been let, and some hay

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Field Notes.

Truckee-Carson (continued).

has been sold for shipment. Ten and eleven dollars have been received for some hay in the stack and \$12 to \$14 is being offered for hay, f.o.b. cars. All crops, including fruit, are very promising at this time.

Boise.

On Tuesday, of the week ending July 14, the date for the monthly meeting of the Board of Directors of the Water Users Association, a mass meeting of water users was held to discuss the shortage of water on the project which is becoming acute, due to recent leaks in the main supply canal. The meeting lasted all day, the greater part of the time being consumed with reports of individual water users. Resolutions were passed condemning Reclamation Service officials who are alleged to be responsible for all the trouble.

The Boise Valley Cow Testing Association was reorganized at a meeting in Meridian on Friday. Only about half of the members were present. Officers and directors were elected and instructed to employ a tester as soon as possible. The membership of the association includes 32 herds, containing 493 cows, subscribed. There are no applications for the testers' position.

Bids on the wool pooled at Meridian were opened on the 10th. Only three bids were received, one being a flat 61 cents bid, another 61½ cents for coarse wool and 51½ cents for fine wool, and the highest 63 cents flat, which was accepted. The net weight was 17,552 pounds consigned by 14 different men. The shrink on this wool was more than was expected, amounting to a little over 5 per cent on the consignments of May 12, to June 2. One lot shrunk over 15 per cent. The buyer was the Oregon City Mfg. Co., of Oregon City, Oregon. The wool was weighed out on Saturday.

Mr. Rinehart visited the Boise project this week to assist in the reorganization of the testing association and to look for pure bred sheep.

Shoshone.

Most of the week ending July 7 was given to assisting three men in the purchase of bulls, visiting grass pasture tests, finishing up with the cooperative wool sale, investigating a possibility of a cooperative shipment of sheep and discussing silo construction.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Shoshone (continued).

A good many farmers started alfalfa harvest the latter part of the week. About half of a normal yield is expected for the first cutting.

A movement has been started on the project to organize a potato selling association.

During the week ending July 14, the herder for the Shoshone project Live stock Association reported the cattle on the Forest Reserve range to be doing well. There is still considerable feed on the range adjoining the project, but the grass is drying very fast and the cattle have to travel a long distance for water.

Alfalfa harvest is still in full swing. The weather for harvesting is excellent, being clear and hot.

The Boys and Girls Club work this year is in charge of a paid leader, the Powell school superintendent acting as leader.

Uncompahgre.

The greater part of the week ending July 14 has been spent in the work of gathering information from farmers regarding the matter of holding a sale of live stock at the fair. There is a great deal of interest in the matter as it affords a place of selling a few head of desirable animals and will attract a great deal of attention to the fair.

In connection with the sale information, the matter of forming a bull association was discussed. Several meetings will be attended where the matter will be presented to the farmers in the next two weeks.

One of the farmers near Olathe expects to construct a lath and plaster silo this fall. This is the first one to be talked of and it is being looked upon with interest by other farmers. The local silo dealers announce a further raise in price, from 12 to 20 per cent, in material for silo building. The prices are high on the cement stave silo, making it nearly out of the question to build in many cases.

On Monday, the county agent recently placed in Delta county was conferred with regarding the work in live stock on the project.

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Field Notes.

Huntley.

Eleven farm visits were made during the week ending July 21, and on Saturday the annual project picnic was attended at Osborn. One farmer on the project has contracted for a silo to be erected this fall. There is a strong probability that there will be several others contracted for soon.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

HOGGING DOWN RYE

According to Ohio Experiment Station Bulletin No. 303, a net return of \$15.10 per acre was secured at one of the County Experiment Farms in Ohio by hogging down rye and supplementing the rye with 1/4 of a pound of tankage per day per hog. The following summary of the results is quoted from the bulletin referred to:

"On July 21, 28 pigs which averaged 51.8 pounds in weight were turned on 2 acres of the rye and allowed to harvest it. During the 38 days on rye the pigs were fed one-fourth of a pound of tankage daily per head. Following is a brief statement of the results secured:

Initial weight, July 21.....	pounds.....	1,452.0
Final weight, August 28.....	do	1,911.5
Total gain.....	do	459.5
Average daily gain per pig.....	do .....	.432
Rye required per 100 lb. increase in live weight.....	do	360.4
Tankage consumed per 100 lb. increase in live weight.....	do	57.127
Net return per acre with hogs at 8 ¢.....		\$15.10
Net return per bushel.....		1.16

The yield of the acre of rye that was cut and threshed was 13 bushels. On this basis the 2 acres that were hogged down were estimated to have yielded 26 bushels of grain".

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.IMPORTING CALVES.

During the past two or three years, the practice of importing calves to the irrigated lands has reached some importance. The practice has been followed to some extent by farmers wishing to secure beef stock, but it has been confined chiefly to securing dairy cattle. During the past year the high cost of all stock feeds, together with advanced prices for market milk, has made it possible to purchase calves at relatively low prices, particularly in districts where dairying is largely on the market milk basis.

Some of the advantages to the irrigation farmer of importing dairy calves are as follows:

1.- Less money is required than is necessary when older stock are purchased.

2.- The buyer probably takes less risk of getting inferior individuals; that is, he may know as much as the seller about the individual quality of the stock, so that he does not buy individuals which are known to the seller as inferior, as he often does when purchasing mature cattle.

3.- The equipment and feed necessary for mature cows can be provided gradually, while the calves are being grown with simple, inexpensive equipment and comparatively small quantities of feed.

But there are also possible disadvantages, and the results of importing calves are not always satisfactory. As was brought out at the recent meeting at Salt Lake, and has been indicated from time to time in the Weekly Bulletin, there have been some disappointments in connection with calf importations. Mr. Ireland has reported the disastrous results secured by farmers on the Boise project when they imported calves from the Tillamook district in Oregon. Those losses resulted chiefly because the farmers failed to secure stock of good breeding and because the calves shipped were too young. The latter fact resulted in various physiological difficulties which caused numerous deaths, and because of which many of the calves that lived were decidedly unthrifty.

Mr. Lindgren reports that of a shipment of 58 calves from the Edgewater Farms, Wisconsin, to Montrose county, Colorado, in December, 1916, approximately 50 per cent died during the past winter. These calves were about three weeks old when they were shipped, and were in transit nearly a week, during which time the weather was cold. After arrival at their destination they developed scours and symptoms of pneumonia. Several of those which recovered are still unthrifty. Four conditions affecting this shipment were unfavorable: The calves were too young for the trip; the weather was cold; the shipping time was excessive; and several farmers bought more calves than they were able to care for properly.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Importing Calves (continued).

Mr. D. H. Propps, a representative of the U. S. Dairy Division, stationed at Lincoln, Nebraska, has been active during the present year in promoting the importation of calves of dairy breeding from Wisconsin. He reports very satisfactory results. The express shipping time from Wisconsin points to points in Nebraska seldom exceed 36 hours, - a fact which has favored the Nebraska importations. Mr. Propps stated (June 26) that calves of very good breeding could be purchased in Wisconsin for \$12 to \$16, at 3 to 4 weeks of age. He also stated that most of the calves shipped from Wisconsin, including those sold by the Edgewater Farms, are purchased by middlemen in small lots from the dairymen, who are willing to sell at low prices rather than to feed for veal or to kill the calves at birth. This is specially true now, while the prices of market milk, milk products and feeds are high. The growers themselves seldom ship, according to Mr. Propps.

The following suggestions with reference to calf importations are based on information secured from various sources during the past two years:

1.- Farmers seeking calves for dairy purposes should assure themselves that the calves purchased are of good dairy breeding and in good physical condition. This information can be secured by our field men in the few cases where they accompany representatives of the farmers to the dairy centers; otherwise through reliable breeders, breeders associations, and representatives of agricultural colleges or the Dairy Division in the districts where the calves are to be purchased.

2.- The greatest supplies of calves in the Wisconsin districts are available in April and May and again in September and October; but small numbers of calves can be secured there at practically any time.

3.- Calves less than 3 weeks old should not be purchased if they are to be shipped without frequent feeds of fresh milk.

4.- Shipping during winter is generally inadvisable.

5.- What appears to be a good method for long-distance transportation is to ship a number of calves and a few producing cows in the same car. The calves can be kept by themselves in one end of the car, fed frequently on fresh milk from the cows, and thus be kept in excellent condition.

6.- A farmer should not get more than two or three calves at one time. The losses usually occur in the large lots, which are seldom properly cared for. By properly caring for a few calves at a time, a farmer can participate in successive importations until he has secured all the calves he desires.

It is believed that the importation of good calves can be made an important feature in the development of the dairy industry on

28 July, 1917.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Importing Calves (continued).

many of the reclamation projects. The success of the practice will depend chiefly on the observance of such precautions as are suggested above, and on the skill and patience exercised by the farmers who follow it.-- F. D. F.

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WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Yuma.

During the week ending July 7, the maximum temperature was 107, minimum 67 and greatest daily range 40.

Thirty-four acres were irrigated.

The Colorado River still stands at very high flood but all levees are reported in excellent condition. It was reported early in the week that small breaks had occurred in levees both near Blythe on the Palo Verde Project and in the Volcano Lake levee in the Imperial Valley. Neither have yet caused serious loss.

The following crops were planted during the week: Two hundred and two varieties of foreign corns on C35; miscellaneous grain sorghum varieties on C30 and 31; Dwarf milo on E8 and Whip-porwoll cowpeas on C32 to 34 for a plot variation test.

Cultivation and hoeing progressed as usual. Plots D14 and 16 were plowed and plats D13 to 16, inclusive, were irrigated and prepared for grain sorghum plantings. Two loads of gravel were hauled for cement work on the ditch system.

Alfalfa hay was harvested from the following borders, D6 to 9, 11, 12 and E3.

The threshing of flax plats was completed. In the nursery test of 23 varieties, the yields ranged from 7.8 to 19.85 bushels per acre, the average being 13.64 bushels per acre. In the field test of 9 varieties planted in 30 inch rows, the yields ranged from 6.08 to 10.11 bushels, with an average of 8.6 bushels per acre. The highest yield in the rate-of-seeding test, in which Russian flax (C.I.#3) was broadcasted, was 11.85 bushels per acre, from a seeding of 50 pounds per acre. The differences in yield in this test were insignificant. In the date of seeding test with the same variety, the best yield, 26.1 bushels per acre, was secured from the seeding made December 15.

During the week ending July 14, the maximum temperature was 111, minimum 75 and greatest daily range 34. The entire week was made up of high temperatures and high humidities, a trace of precipitation being recorded two different days. These climatic conditions made the week very uncomfortable for people and very severe on work stock. Numerous cases has been reported of the loss of horses on the road or in the field. Most farmers are now doing their field work at night. Many women and children, as well as men, who could leave their work, left during the week for coast points.

Nearly all plantings of Dwarf milo and Feterita over the project are now in. The earliest crops of alfalfa seed were harvested this week.

On the experiment farm thirty acres were irrigated. Most of the labor for the week was employed at hoeing and cultivating.

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WESTERN IRRIGATION AGRICULTURE
Field Notes.

Yuma (continued).

Two check gates and one culvert were set in the irrigation system. Indian alfalfa seed was harvested from plats C27 and 28 and alfalfa hay was harvested from plats C21, 24 and 41. Grain sorghum varieties were planted on borders D13 to 16.

We are at present harvesting fruit from peaches and grapes. Plums and apricots have all matured. Tomatoes, cantaloupes and melons have been in season for more than a month.

Since the middle of the week, the Colorado river has been falling and the seepage also receding slowly.

During the week ending July 21 the following temperatures were recorded: maximum 112, minimum 75 and greatest daily range 33. Thirty acre were irrigated. High humidities and temperatures continued throughout the week which combination seems rather unfavorable for alfalfa seed that is maturing and the setting of cotton. Alfalfa seed is often discolored by heavy dews at this season of the year. All varieties of cottons seem to be shedding squares and small bolls quite badly at present, which is the first grievance of this nature reported, generally, for the season.

Considerable cultivating and hoeing of row crops, orchards and nursery was done. Alfalfa hay was harvested from fields B1 to 4 B9 to 17, C1 to 5 and D1 to 5. A planting of sweet corn and 13 varieties of beans were planted for test of fall crop yields.

Sheep and steers on pasture were weighed on the 19th. The steers made only a small gain during the recent period of 29 days while the sheep did not gain at all. This might well be expected, however, during such hot weather. The steers made a gain of 40 pounds per acre or \$3.20 return - considering gains worth 8 cents per pound. This makes a net return per acre during the 59 days of pasture of \$12.50 per acre.

San Antonio.

During the week ending July 21, the maximum temperature was 100, minimum 69 and greatest daily range 31. The drought was effectively broken when a rain of 2.12 inches fell on Friday night, beginning at about 7 o'clock. An additional .78 inch was recorded on Sunday morning, making the total precipitation 2.90 inches. The rain on Friday fell in a comparatively short time, which resulted in packing the soil and considerable runoff even from cultivated fields. The rain will be of much benefit to sorghum and other feed crops and to cotton. The corn crop was a complete failure on many farms and much of it has been cut for fodder. In some cases, the corn land will be planted to the

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WESTERN IRRIGATION AGRICULTURE.
Field Notes.

San Antonio (continued).

grain sorghums. The rain has put the soil in good condition for planting and the prospects are that a large acreage will be planted to grain sorghums, late corn and forage sorghums.

The principal field work for the week was going over the fields again with hoes and cutting out scattering weeds and Johnson grass. The cultivated fields appear to be freer from Johnson grass infestation now than at any time in recent years. One man worked the greater part of the week in repairing the office and in painting the interior.

Belle Fourche.

During the week ending July 7, the sows and pigs on alfalfa pasture were weighed. Each of the 3 lots was kept in a quarter-acre plat of alfalfa pasture which was divided into two parts, pastured alternately. The following is a summary of the results secured between May 24 and July 6, a period of 43 days, as reported by Mr. Bober:

Summary, 1917

Lot Number	1.		2.		3.	
Grain Ration.	2% barley for 28 days; 3%, 15 days		2% corn for 28 days; 3%, 15 days		2% corn for 28 days; 3%, 15 days; and tankage	
	Sows	Pigs	Sows	Pigs	Sows	Pigs
Number of swine.....	2	16	2	14	2	18
Initial weight, pounds.....	365.5	120.6	432.0	30.0	401.5	132.0
Final weight, pounds.....	317.0	372.5	351.0	206.5	336.0	479.0
Gain (+) or loss (-), pounds.	-48.5	+251.9	-81.0	+176.5	-65.5	+347.0
Grain fed, pounds.....	331.0	327.0	398.0	93.0	374.0	366.0
Tankage fed, pounds.....					19.5	20.5
Total grain fed, pounds.....	656.0		491.0		740.0	
Total tankage fed, pounds...	.....		.....		40.0	
Pounds of grain per 100 pounds of gain on pigs.....	260.0		278.0		213.0	
Pounds of tankage per 100 pounds of gain on pigs.....	.....		.....		11.5	
Age of pigs at beginning of experiment, days.....	8 pigs, 25 8 " 10		8 pigs, born 5/27 6 " " 5/29		10 pigs, 24 8 pigs 4	
Average.....	17			15	

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WESTERN IRRIGATION AGRICULTURE
Field Notes.

Belle Fourche (continued)

Because of the fact that the pigs in lot 2 were approximately 20 days younger than those in lot 1 and 3, the results secured during the 43-day period are not strictly comparable. The results secured with lot 3 appear to show some benefit from the use of tankage.

During the week ending July 21, the maximum temperature was 100, minimum 54 and precipitation .18 inch.

The season continues very dry and crops on the dry land are burning up.

During the week, beets in the irrigated rotations; beets, potatoes and corn varieties in field O; oats and alfalfa in field P; alfalfa in field I; and corn and alfalfa in field K, were irrigated, and irrigation of oats and alfalfa in the new 80 acres was finished.

Corn and potatoes were cultivated in the irrigation rotations; potatoes in field O, and some cultivating was done in the garden.

Harvesting was commenced in the dry land rotations.

All roads and alleys on the dry and irrigated rotations were hoed and the grounds and buildings cleaned.

The Third Annual Farmer's Picnic was held at the station July 21. It is estimated that 200 automobiles and 100 teams were parked on the grounds and that 1500 people were in attendance during the day. The morning was given to speaking, the afternoon to athletic sports and horse races, ending up with a ball game.

Mr. Allen Clark of Cereal Investigations visited the station the forepart of the week.

During the week ending July 28, the maximum temperature was 108, minimum temperature 63, and precipitation .04 inch.

Irrigation of alfalfa in the irrigated rotations was finished and irrigation of small grains and potatoes is about finished. Irrigation of variety grains in field O was finished and irrigation of oats in field P was begun.

Beets in the irrigated rotations were hoed and some cultivating was done. Root crops in field O and P were cultivated.

Oats on the dry land rotations were harvested and brome grass, oats and rye in other fields on the dry land rotations were harvested and shocked.

Five men spent a day in the Newell Park, mowing and hoeing. Part of the week was put in by the men in work on ditches, miscellaneous mowing about the farm, work on foundation of the new house, and hauling water.

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WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Huntley.

During the week ending July 21, the maximum temperature was 100, minimum 58 and precipitation 0.

Weather continued hot and dry during the week and all crops are requiring irrigation. The effect of the drought during the past six weeks following the last spring rain is apparent in the poor condition of most crops on the project. This is most noticeable in the sugar beet crop. It is estimated now that with the decreased beet acreage and the poor condition of the crop, that the total production of beets will be only about one-half of that of 1916.

The annual project picnic was held at the Experiment Farm on July 21. The attendance was estimated at about 3,000 people.

Sugar beets in the irrigated rotations were irrigated for the first time, alfalfa, wheat, and oats for the second time and flax for the third. Corn and potatoes are now receiving the first irrigation.

The first cutting of alfalfa was harvested June 30. The yields are summarized below:

Age of Stand	No. Plats	Maximum	Minimum	Average
Fall seeded (1916)..	3	.67	.46	.59
Second year.....	11	1.92	1.25	1.67
Third year.....	2	1.79	1.65	1.72
Continuous (6th.year)	1	....	....	1.50

On July 11 the four fall pigs in field K and the five in field L-IV were taken off the alfalfa pasture. The results are summarized below:

Fall Pigs on Alfalfa Pasture, Field K.

	Total	Average
Number of days.	61	....
Initial weight, pounds	510	127.5
Final weight, pounds.	794	198.5
Gain for period, pounds	284	71.0
Average daily gain, pounds. . . . .	...	1.16
Amount of grain fed, pounds.. . . .	798
Net return per acre\$47.60	
Pounds grain per pound gain	2.81

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WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Huntley (continued).

Fall Pigs on Alfalfa Pasture, Field L-IV.

	<u>Total</u>	<u>Average</u>
Number of days	61	....
Initial weight, pounds.. . . .	508	102
Final weight, pounds	816	163
Gain for period, pounds	308	61
Average daily gain, pounds . . . . .	...	1.01
Amount grain fed, pounds	835	....
Net returns per acre	\$52.84	
Pounds grain per pound of gain . . . . .	...	2.81

On the same day the fall pigs were removed from the alfalfa pastures in fields K and L-IV, nine spring pigs averaging 34.5 pounds were put on in field K, and eight averaging 34.5 pounds were put on in field L-IV.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

North Platte.

On account of the break that occurred in the Tri-State dam last week, the water was shut out of the Tri-State canal all of the week ending July 14. Crops under that ditch are beginning to suffer considerably for lack of water.

The farmers generally are very much behind with their farm work. This is especially true on the eastern end of the project. Under the Inter-State canal the water is now being delivered 3 days on and 4 days off.

On Tuesday, in company with Prof. Link, of the State University, Mr. Weiss, Project Manager, Mr. Innis, the Mitchell Garden Supervisor, and Mr. Holden, of the Experiment Farm, a trip was made to a number of the potato fields over the project for the purpose of getting information as to the outlook of the crop. In the vicinity of Mitchell and Minatare, the stands of potatoes are only fair. In many fields there is not over 25% of a stand, and in most fields visited there is not over 75% of a stand. In the Dutch Flats district the outlook is much better. Prof. Link, who spent several days on the project at planting time, attributes most of the poor stand to poor seed potatoes.

Six herds of well hogs were given the double treatment against cholera during the week. One herd vaccinated was on a farm where cholera occurred last year. The other five herds treated were in localities where cholera occurred last fall or during the past winter.

Twenty six farm visits were made during the week and 18 calls for service were received.

After a week's work on the Tri-State headgate, water was turned into the canal the forepart of the week ending July 21, but the head did not amount to over one-third the usual amount carried by the ditch. As the water in the river continues to get lower less water will flow down the canal. The results have been very discouraging to the farmers under this private ditch. It is now reported that the Reclamation Service force will be used in an effort to repair the break in the dam that has been causing the trouble.

A large cattle barn is now being constructed by the County Fair Association at the fair grounds at Mitchell which will be a good addition to the live stock equipment. Five counties in western Nebraska and Goshen county in Wyoming, are invited to compete for the premiums offered by the Scottsbluff county fair this year. Special inducements are being offered in the way of prizes for boys and girls club work by the county fair association.

Two days of this week were spent with Prof. Link, of the State University, visiting potato fields over the project. During the

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

North Platte, (continued).

few days the weather has been considerably cooler and the potato diseases are not showing up so much as they did a few days ago. However in some fields considerable blackleg and fusarium wilt are still in evidence. The farmers' union store at Morrill is planning to build a large potato cellar this fall for the purpose of storing potatoes. At the present time, the potato outlook on the project is fair to good.

Uncompahgre.

One day of the week ending July 21 was spent with project farmers who were interested in the purchase of dairy cows. A trip was made to Cimmaron, a point off the project, to look at some Shorthorn and Holstein cows. Six cows were purchased by the farmers.

Monday was spent in working on fair premiums to be awarded at the Western Slope Fair. The Fair Association voted \$300 additional money for live stock premiums.

There is much concern among project farmers regarding an outbreak of alfalfa weevil near Hotchkiss, Colorado, a point thirty miles from the project. The matter is being handled by the College people.

There is danger of large numbers of range cattle being sold this fall on account of the high priced hay. Farmers are holding their hay at \$10 and \$12 per ton. Cattle men claim they cannot afford to pay more than \$7 and \$8 to feed to range cows. The same thing is true with the sheep men. At present the situation looks serious. If the second cutting turns out heavy hay will probably be cheaper. The first cutting is good all over the project and is estimated as 25 per cent. heavier than in former years.

The Delta cheese factory is paying 45 cents for butter-fat at present and the creamery at Montrose, 35 cents.

The potato crop looks exceptionally well on the ground but there is a great deal of anxiety on part of growers regarding the "set" on the vines. There are some fields where the tops look well but no potatoes have "set".

Wheat is being cut and the prospects are good for a satisfactory yield.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Truckee-Carson.

During the week ending July 21, there were received 20 calls for assistance, and six farmers were visited in response to requests.

Considerable time is still being spent in connection with the loss of turkeys from disease in the Stillwater section. The trouble has been found to be blackhead and cholera. One new outbreak of blackhead was reported the last of the week. Preparations for immunization against cholera have been made by the State Live Stock Disease Control Board. The possibilities of combatting blackhead in turkeys are as yet very uncertain.

The campaign against tuberculosis in dairy cattle is being constantly pursued. During the past two weeks, one hundred and thirty five head of dairy cattle on the project have been submitted to the tuberculin test. Of this number, only one animal gave a suspicious reaction. The intradermal test is invariably used for a preliminary survey of the herd. Animals reacting to this test are later subjected to the thermal test before they are condemned. All reacting animals are branded with the letters "T.B." and left in the possession of the owner to dispose of as he sees fit, since there is no law in this state governing the disposition of tuberculous animals. Young animals that have been reared in this locality have very rarely reacted to the tuberculin test. The tuberculin testing has been done by an agent from the State Live Stock Disease Control Board.

Shoshone.

During the week ending July 21, 27 farm visits were made, 13 office calls were received and 2 other conferences were held.

There is some question among the sheep men here as to whether to use Cotswold or Hampshire rams this fall. Hampshires have been used mostly so far but the man who has been buying most of the wool in this country is advocating Cotswolds.

Most of the grass pastures sown this year are not doing well. The late spring followed by the hot dry weather has caused a great rush of work both in seeding and irrigation of crops. Since grain is such an important crop this year the grass has been neglected to some extent. Then the hot dry weather has made it very difficult to keep the ground from baking. One piece that was seeded just before the last cold spell did not come up. It is supposed that the seed rotted. Several men did not get the seed sown.

One farmer lost a cow this week from sweet clover bloat and another had to stick one to save her. Several have had heavy

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Shoshone (continued).

losses of sheep on alfalfa pasture this year. The best sheep man here has sold out his sheep and does not expect to buy more until he has grass pasture for them.

There seems to be a tendency, at present, for the farmers to keep only a small amount of stock. Many of them are not prepared to care for stock properly and with the present prices of grain and hay there is a tendency to sell the grain and hay rather than feed it to stock. There will probably be call for cooperative shipping in the near future.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Truckee-Carson.

During the three weeks ending July 28, the maximum temperature was 105, minimum 46 and precipitation .09 inch.

A carload of gypsum purchased from the I. H. Kent Company, was hauled to the farm.

All the corn plats were weeded, and suckers removed.

Sweet clover was cut on H9, 10; D6, B1,2,3, and 4; G1.

Alfalfa was cut from plats H5,6,7 and 8, and G2.

Barley was cut on rotation plats F6, 8, 11 and 12, on July 17, and wheat was cut from plats H1 on July 21, and from E3, 4, 5 and 6 on July 25.

The pig experiment on sweet clover and alfalfa pastures has now been conducted for 4 weeks, with the result that the two lots have made exactly the same amount of gain, consuming equal amounts of concentrated feed. The feed given consists of a 2 per cent ration of barley, and tankage mixture in the proportion of 3 to 1. The results are very satisfactory, 2 pounds grain having been required for a pound of gain. The results in detail are given in the following table:

Report of pigs pastured on sweet clover and on
alfalfa, June 30 to July 28, 28 days.

	Sweet Clover Pasture	Alfalfa Pasture
Number of pigs	9	8
Initial weight, pounds.....	527	537
Final weight, pounds.....	644	654
Gain in weight, pounds.....	117	117
Value of gain at 7 cents.....	\$ 8.19	\$ 8.19
Daily gain, per cent .....	.72	.71
Barley fed, pounds.....	172	172
Tankage fed, pounds.....	60	60
Grain, per pound of gain, pounds.....	1.98	1.98

San Antonio.

During the week ending July 28, the maximum temperature was 96, minimum 70, and precipitation 0.

The soil was too wet to permit of field work until Tuesday. The milo in the field was rather badly wet by the rains and it was necessary to turn the bundles in order to dry. Where the heads

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1. The first step is to identify the key components of the system. This includes understanding the hardware, software, and network architecture.

of 7000 copies.

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1. The first part of the document is a list of names and titles, including "The Hon. Mr. Justice" and "The Hon. Mr. Justice".

1. The first group of people who are not allowed to enter the country are those who are considered to be a threat to national security. This includes anyone who is involved in espionage, sabotage, or other activities that could harm the country's interests.

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At the same time, the Commission has been working to ensure that the information it receives is accurate and reliable. This has involved a number of steps, including the development of a code of ethics for its staff, the implementation of a system of internal controls, and the establishment of a process for the review and approval of all information received. The Commission has also been working to improve its communication with the public, and to ensure that its decisions are based on the best available information.

1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

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1. *Chlorophyll a* (Chl *a*) is the primary photosynthetic pigment in most plants and algae. It is a green pigment that absorbs light energy in the blue and red regions of the visible spectrum. Chl *a* is located in the thylakoid membranes of chloroplasts.

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1. The first group of people who are not allowed to enter the country are those who are considered to be a threat to national security. This includes anyone who is involved in espionage, terrorism, or other activities that could harm the country's interests.

1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific information required.

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WESTERN IRRIGATION AGRICULTURE.
Field Notes.

San Antonio (continued).

touched the ground, some sprouting occurred. Threshing of milo was started Tuesday afternoon and completed Wednesday. While the yields were rather low, they were considered satisfactory under the seasonal conditions and with a poor stand. The average yield was 19.3 bushels per acre, the highest being 25.9 bushels per acre and the lowest, 10.9 bushels per acre. Harvesting of corn was started. The yields are very low; the average will probably be less than half that of milo.

All fallow plats were harrowed and cotton was cultivated. Orchards were also cultivated. Soil samples were taken on the corn plats in the rotation experiments.

All vegetation is growing rapidly since the rains. Sudan grass, from which the steers were removed sometime ago, is making a very rapid growth. The steers were returned to pasture on the 27th. Weeds and Johnson grass, as well as forage sorghum, are making good growth.

NOTICEEmployers' Liability

Under the terms of an act of Congress, approved September 7, 1916, the United States will pay compensation as therein specified for the disability or death of an employee resulting from a personal injury while in the performance of his duty, when such injury or death is not caused by the willful misconduct of the employee or by his intention to bring about the injury or death of himself or of another, or if intoxication of the injured employee is the proximate cause of the injury or death.

Section 24 of the act requires that after any injury to an employee resulting in death or in disability his immediate superior shall make a report to the United States Employer's Compensation Commission containing such information as the Commission may call for.

In accordance with this provision, reports should be submitted to this office by farm superintendents and others in direct charge of field stations in regard to every injury resulting in death, or in any loss of time, or in any expenditure for medical, surgical, or hospital services or supplies. It should be understood that these reports should not be omitted in cases in which the time lost was covered by annual or sick leave or in which no claim for compensation is contemplated.

REPRODUCTION OF THE
ORIGINAL

The first part of the report deals with the general situation of the country and the progress of the work. It is followed by a detailed account of the various projects and the results of the investigations. The report concludes with a summary of the findings and a list of references.

REPRODUCTION OF THE
ORIGINAL

The second part of the report deals with the specific details of the work. It includes a description of the methods used, a list of the equipment and materials, and a detailed account of the results of the investigations. The report concludes with a summary of the findings and a list of references.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Boise.

A small bunch of shotes on the state experiment farm was weighed during the week ending July 21. These shotes have been on alfalfa pasture without grain or other feed since the pasture was big enough to turn on. They were divided into three groups, two of which had made slight gain, the other group having lost somewhat in weight since being turned on pasture. The same shotes will be weighed after grazing a patch of peas and will then be put on a patch of mixed peas and wheat.

One day of the week was spent with Mr. Lowell of the Caldwell Commercial Bank, in driving over the project for the purpose of investigating the damage caused by the water shortage. The trip was over an area of 106 miles and included the districts of Greenleaf, Wilder, Arden Valley, Deer Flat, Melba, Kuná, and three districts in Snake River Valley. As close observation as possible of the fields which can be seen from the road seem to indicate that crop conditions under the Deer Flat Reservoir were the best that they have ever been. Under the higher ditches the damage has been serious, many fields being a total loss. In addition to the apparent damage there has been a great deal of loss of new seed of clover and alfalfa and grain fields which is not discernible. All breaks in the canal system have been repaired and the upper ditches are carrying water nearly to their capacity, but the Deer Flat Reservoir is almost completely emptied and cannot be replenished to any great extent. Settlers below the Reservoir have been reduced to 1/4 inch of water per acre, which they affirm is almost useless as far as practical irrigation is concerned.

Monday of the week ending July 28 was designated by the representatives of the Caldwell Commercial Bank as the time to display the Shorthorn cattle brought in from the central states. The event had been advertised and it was hoped there would be a good number of men to inspect the cattle which had been classified according to grade and placed in separate pens for inspection. Prices ranged from \$225 per head for dry cows and plain cows with calves, up to \$300 per head for the best grade of stock. These prices, quality of cattle considered, are probably 50 per cent lower than the prices of cattle shipped in for speculation by outside parties. The latter cattle have not sold, however, and have been shipped into Utah for sale there.

On Tuesday, Chas. Cairns, chairman of the sales committee of the wool pool, was in the office and the statements were made out for each consignor. The total value of the shipment was about \$10,950.

THE HISTORY OF THE UNITED STATES

1800

1800

The first of the great events of the year 1800 was the election of Thomas Jefferson as President of the United States. This was a significant event, as it marked the first time that a Democratic-Republican had been elected to the office. Jefferson's victory was a result of a combination of factors, including his popularity among the common people and the support of the Democratic-Republican Party.

Jefferson's presidency was marked by a number of important events, including the Louisiana Purchase of 1803, which doubled the size of the United States. This purchase was a major achievement, as it gave the United States access to the Mississippi River and the Gulf of Mexico. Jefferson's administration also saw the beginning of the War of 1812, which was a result of tensions between the United States and Great Britain over trade and territorial issues.

The War of 1812 was a significant event in the history of the United States, as it established the country's independence from Great Britain. The war was fought between the United States and Great Britain, and it resulted in a series of treaties that ended the conflict. The war also had a major impact on the development of the United States, as it led to the growth of the American economy and the expansion of the country's territory.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Boise (continued).

On Friday a trip was made by auto with County Agents Williams and Musser, and T. H. McDermott, who is president of the Ada County Farm Bureau and Treasurer of the Boise Valley Grazing Association, to the Boise Forest Reserve, for the purpose of inspecting the association cattle and the condition of the range after what has been considered an exceptionally dry season. The cattle were found to be in very good condition and seemed to be perfectly contented, although the range is getting very dry and the grass short. Those living near the range, however, assert that it is in about normal condition for this time of year and that there is promise of plenty of feed for the remainder of the season. One man is taking care of the association cattle, which number about 700 head.

Uncompahgre.

During the week ending July 28, twenty farm visits were made and requests for service were received from 12 farmers.

The County Agent from the San Luis Valley visited the project one day and the time was spent in assisting in gathering information regarding pasturing of hogs on alfalfa and the sowing of irrigated pastures.

The hog feeding test on the farm of Frank Nash was completed during the week, for the first period of thirty days. The eleven hogs on test are being fed ground wheat. It was found that they were putting on gains at 9 cents per pound, which allows a reasonable profit for feed consumed.

A meeting was attended at Olathe and a talk given on the matter of forming a bull association. Eleven farmers attended this meeting.

Shoshone.

The first cutting of alfalfa was practically finished during the first part of the week ending July 28. The hot dry winds dried out some of the alfalfa ground so much before it could be irrigated that the second cutting will be delayed. Most of the first cutting went up in excellent condition, though, as a rule, the yield was light.

An article was published in the local papers regarding the co-operative shipping of cattle and the importance of reserving all good milk cows. It is likely that on this project some cows will be allowed to go which could be kept profitably. The unusual rush of work this season has made milking cows objectionable to some men, who have been farming without any help. However, at a farm sale

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Shoshone (continued).

this week, good looking cows sold well. A young Holstein-Jersey cow in good condition and just fresh, sold for \$96.50 without her calf. A 5-year old Shorthorn cow in fair condition sold, with her young calf, for \$84, and a large Shorthorn cow due to calve sold for \$79.

Spring pigs, as a rule, are getting very little grain now, because of the high price and scarcity of the grain. In spite of the high price more would be fed if it could be easily obtained.

It appears that there will be a good demand this fall for sheep to pasture beet tops and alfalfa stubble.

Truckee-Carson.

During the week ending July 28, a very high class Jersey bull, 11 months old, was imported into the valley from Modesto, California. The average production of the two nearest dams of this bull is over 600 pounds of butter a year. It is expected that this bull will be the nucleus of a first class Jersey herd. Some Jersey females may be imported later. This bull cost \$125 in Modesto. Requests have recently been sent out for extended pedigrees for the selection of a Holstein bull calf. No animals are considered which cannot show official records for the immediate dams of the bull in question. At the rate that first class bulls are coming into this valley, there will be no excuse for the existence of inferior bulls at the head of any herd within another year. The presence of these excellent bulls is certain to result in a large number of high class heifers in the near future. This is the most hopeful aspect of the dairy situation in this valley at the present time. Well bred dairy cows will offset many conditions that would otherwise retard the development of the industry.

Grain harvesting has begun. The prospects are favorable for a good yield of wheat and barley. The acreage, however, is less than normal because of the large acreage of beets that have been planted on land that has ordinarily grown grain.

Umatilla.

During the month of July, alfalfa hay sold for as high as \$15 per ton in the stack. There seems to be an unprecedented demand for feed of this kind from stockmen and others residing off the project. This will no doubt serve as an added impetus to the reclamation of new land for alfalfa during the coming fall months, as it has on the West Extension during the summer.

The first of these is the fact that the
 government has been unable to raise the
 necessary funds to meet its obligations.
 This has been due to a combination of
 factors, including a decline in foreign
 aid and a reduction in domestic
 savings. The second factor is the
 government's failure to implement
 effective economic reforms. This has
 led to a stagnating economy and a
 loss of confidence in the government.
 The third factor is the government's
 failure to maintain a stable political
 environment. This has led to a
 loss of confidence in the government
 and a decline in its ability to
 raise funds.

1. 凡在本行工作的干部、职工，其家属如有违法犯罪行为，经查明属实，本行有权取消其家属在本行的福利、奖金、工资等一切待遇。

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DEMONSTRATIONS ON RECLAMATION PROJECTS
Field Notes.

Umatilla (continued).

As usual the month's work included visits to individual tracts in answer to requests for assistance in connection with problems of irrigation and drainage and of land grading operations, besides follow-up visits to note and discuss the progress of work on the tracts. In a few cases, with the increased area of newly irrigated higher lands, the question of drainage is becoming serious. With the further development of the shallow-soiled land about Boardman seepage may become a serious factor. At present it is the endeavor of this office to warn the settler of this danger and meet it by the proper preparation of his land for rapid irrigation in borders rather than by wild flooding where the low areas become waterlogged due to the excessive length of time required to irrigate the knolls.

Several days were spent with Mr. Allen in inspecting work done on the various tracts about Hermiston, Messner and Boardman and discussing with the owners problems pertaining thereto.

In July, 53 requests for assistance were received and 125 farm visits were made.

North Platte.

During the week ending July 28, one outbreak of hog cholera was found in a herd of 64 hogs, 4 miles northeast of Minatare. The disease had evidently been in the herd for several days prior to the visit as several animals showed marked signs of sickness. A total of 57 head were vaccinated. On the same day 2 well herds, consisting of 50 and 40 hogs, respectively, were vaccinated with the double treatment.

Grasshoppers are causing considerable damage over a large part of the project east of Mitchell. At present the alfalfa fields are suffering worst, though some damage is being done to potato and oat fields. On many farms the farmers are fighting the grasshoppers with both poison and grasshopper catchers. The indications are that unless something is done to control the grasshoppers they will destroy the second and third cuttings of alfalfa. On many farms a part or all of the alfalfa fields are bare where the hoppers have eaten the alfalfa. Paris green, the poison being used in most cases, is selling for 70 to 75 cents per pound.

Corn is selling for \$4 per hundredweight; butter-fat, 38 cents; shorts, \$2.50 per sack, and alfalfa hay, \$14 per ton at the alfalfa mill in Mitchell.

As yet the water users have not been able to get water down the Tri-State canal, due to the break in the dam some time ago. The Reclamation Service have taken over the matter of repairing the dam and it is expected that a full head of water will be flowing in the canal the latter part of next week.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Minidoka.

As the farmers owning one cooperative band of sheep sold out entirely there was a surplus range left on the hands of the association. This was filled during the week ending July 21 by the purchase of a range band of ewes and lambs. The association members, in cooperation with the Burley banks, purchased the band. The band will not be divided until fall.

Buyers of sheep are numerous on the range. Some half breed Hampshire lambs have been bought for August delivery at 14 cents a pound at the loading point. However, the price has now dropped so that it is not possible to contract at that price. Sheepmen are slow to contract. A buyer representing a Nebraska farmers' and bankers' association was endeavoring to buy old ewes for September 25th delivery. Spread mouthed ewes were desired; $7\frac{1}{2}$ cents per pound was being offered but the sheepmen are holding for \$11 a head. There is much objection to the late delivery as it is necessary to leave the summer range before this date.

There is a marked tendency of the range sheepmen to lamb out all their ewes next spring. This makes the price high. Ewe lambs can be purchased at the price of feeders or market lambs.

The sheep in the cooperative association were visited on the Reserve during the week ending July 28, while the second band was assisted in trailing in. The farm sheep are doing remarkably well and the lambs are making rapid growth. The main difficulty in handling this band was in herding at the beginning.

A number of sheep have been lost by poison. In one district the owners state that the trouble was due to the eating of poisoned grain that had been put out for squirrels and gophers. It is stated that the grain was not well scattered but was left in piles. The fact that only the bands of sheep that had been fed grain last winter suffered any loss corroborated this theory. One cooperative band of sheep passed through this district with a loss of nearly 100 head.

In a second district, west of Hailey, a number of project range sheep were also lost. The general opinion is that it was by poison that was put out. Three theories are advanced by the sheepmen; one that it had been put out by homesteaders who desired to keep sheep out of that district; a second that it had been put out by an association, and a third that it was put out by an individual enemy of one of the large sheepmen who had not expected the other outfits to go on the forest by that particular trail. The last opinion is the one that is most prevalent.

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WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Yuma.

During the week ending July 28 the maximum temperature was 105, minimum 73 and precipitation .62 inch.

Alfalfa for hay was harvested from C36, 37 and 38; E3, 4 and 8, and seed from C39 and 40. Sorghum on C7 and D27 was thinned. The pecans on F1 were plowed. E42 and 43, newly leveled plats, were disked and prepared for planting milo. Indian alfalfa plats C27 and 28, were renovated.

Fences were repaired, plantings of eucalyptus, along farm roads, were pruned, gravel for irrigation gates was hauled and a shade built in the hog lot.

The usual weekly hoeing and cultivating was accomplished.

During the week ending August 4, the following temperatures were recorded at this station: maximum 101, minimum 72, and greatest daily range 27. A rainfall of 1.25 inches occurred on July 30, which was sufficient to tide the crops over for a week without irrigating. The settlers loss, both in alfalfa seed and hay, was quite heavy on account of the recent rains. The Yuma valley received a much heavier rainfall than the north side.

Cement gates and tile were hauled out from Yuma. Sorghum on E5, 6, 8 and 9 was thinned. E42 and 43 was planted to milo.

The weeds and Bermuda grass are growing most vigorously necessitating an extra amount of hoeing and cultivating to keep them in check.

Belle Fourche.

During the week ending August 4, the maximum temperature was 100, minimum 47 and precipitation .45 inch.

All irrigation in the irrigation rotations; oats and alfalfa in field P; root crops and variety corn in field O, and oats and alfalfa in the new 80 acres, was finished. Alfalfa in field I, and pastures in field K, Q and R, were also irrigated.

Some harvesting was done on the dry land and in field O.

Potatoes in field A, beets and potatoes in field O, and beets in field P, were cultivated.

A little time was put in hoeing beets and potatoes in field A, and roads and alleys on the dry land was hoed.

Alfalfa in the irrigated rotations was mowed, raked and cocked.

Some of the men were at work during the week grinding feed, hauling water, and working on the new house.

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WESTERN IRRIGATION AGRICULTURE.
Field Notes.

San Antonio.

During the two weeks ending August 11, the maximum temperature was 100, minimum 69, and greatest daily range 30. There has been no precipitation and crops are showing the need for moisture. Cotton has made rapid growth and prospects are good for a fair crop on the station. Early planted cotton in the vicinity of the station is opening, but apparently will not yield so well as the cotton on the station, which was planted unusually late this year. Sorghum and other forage crops have also made very satisfactory growth since the rain in July.

All corn in the rotation experiments was harvested. While the grain was not thoroughly dry, it seemed desirable to harvest it on account of the large proportion of stalks fallen down on the ground. While the yields were low, they were somewhat better than expected. The average yield was 10.7 bushels per acre, the highest yield, 17.8 bushels, and the lowest, 4.5 bushels per acre. As an allowance for the surplus moisture, these yields were calculated on a basis of seventy-five pounds per bushel. Soil samples were taken on the corn plats in the rotation experiments. All cotton on the farm and orchards were weeded.

Mr. D. A. Saunders of Greenville visited the station on July 31 and supervised the harvesting of the corn variety test, for the Texas Field Crops Association.

From August 2 to 7, inclusive, Messrs. Cardon and Letteer, were absent from the station, during which time, they made a trip to the lower Rio Grande Valley section and the gulf coast section in the vicinity of Tivoli and Austwell, Texas. In the Rio Grande section, short steps were made at Mission, Mercedes, and Brownsville. Agricultural conditions are very satisfactory in these sections, high prices having prevailed for truck crops during the past season. Yields of corn and broom corn are good and very high prices are being paid for broom corn, of which there is a considerable acreage. Numerous small citrus orchards are being planted in the vicinity of Mission, McAllen, and Mercedes. Cotton, which is grown principally upon unirrigated land, or land which is seldom irrigated, is fair. Considerable cotton has been picked. One of the most promising crops for this section is Rhodes grass. Several small fields have been seeded this year and very satisfactory growth and hay yields are being obtained. This crops is also being used for pasture with very satisfactory results.

Through the dry farmed sections of lower coast country, crop conditions are far from satisfactory. In most sections corn is a complete failure, and there has been no fall crops planted. In most sections, cotton is very small and the yields are certain to be extremely low. Much of the range is in very poor condition. In a few localities, small areas are in much better condition. In the

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WESTERN IRRIGATION AGRICULTURE.
Field Notes.

San Antonio (continued).

vicinity of Tivoli, Texas, some cotton will make very good yields. Farther inland, however, conditions are less satisfactory. In practically all of the country between Victoria and San Antonio, agricultural conditions are very unsatisfactory. Throughout most of this section, corn is a complete failure, and the cotton crop is in very poor condition.

Messrs. R. Kent Beatie, of the Federal Horticultural Board, and T. C. Barber, of the Bureau of Entomology, visited the station on the 11th.

Mr. Cardon left for Arizona and California points, the night of the 11th.

Scottsbluff.

HOGS ON ALFALFA.

Results Secured in the Method-of Pasturing Test
During the Spring Period, 1917.

The following is a report submitted by Mr. Holden covering the results secured during the 60-day period, May 15 to July 15, 1917, with six lots of hogs in the experiment with various methods of pasturing alfalfa. Each lot of hogs received approximately a 2 per cent ration of shelled corn. The differences in pasturing methods are described in the report:

The following figures are all calculated on an acre basis, as a matter of convenience, although in lots 1 and 2 only quarter-acre plats were used with five hogs each, and one-half acre plats in lots 5 and 6 with ten hogs each.

The treatments of lots 1 and 2 were in every way alike except that lot 2 received no condiments. The pasture used by each lot was divided by a fence and the hogs alternated as often as necessary to keep young alfalfa before them and also to give the alfalfa some chance for growth. The difference in gain should not all be attributed to the lack of condiments in lot 2, as the alfalfa in this lot was on rather sloping ground and it did not grow as fast nor as rank as the alfalfa in lot 1 which was on more level ground. The lack of condiments in lot 2 caused no noticeable difference in the amount of rooting done.

In lots 3 and 4 the hogs were allowed to forage over the entire acre, the only difference between these lots being that in lot 3 the entire acre was mowed every 30 days and the hay harvested; while in

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WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Scottsbluff (continued).

Hogs on Alfalfa. (continued).

lot 4, alternate halves were mowed every 15 days and the hay likewise harvested, the object being to keep young and tender alfalfa before the hogs all the time. The amount of hay from these two lots was practically the same.

Lots 5 and 6 were alike except that the pasture for lot 5 was divided into 2 pastures, while in lot 6 the hogs were allowed to graze the entire plat continuously.

The following table summarizes the results, calculated to an acre basis:

	Lot 1.	Lot 2	Lot 3	Lot 4.	Lot 5.	Lot 6.
Number of hogs per acre.....	20	20	10	10	20	20
Initial weight, pounds.....	2284	2328	1045	1046	2078	2088
Average initial weight, pounds..	114	116	105	105	104	104
Final weight, pounds.....	3528	3480	1746	1747	3428	3282
Average final weight, pounds...	176	174	175	175	171	164
Total gain per acre, pounds....	1244	1152	701	701	1350	1194
Average daily gain per head,...	1.00	.93	1.13	1.13	1.09	.96
Total amount of corn fed, pounds	3868	3868	1974	1974	3948	3948
Corn per pound of gain, pounds.	3.11	3.36	2.82	2.82	2.92	3.31
Gain per 100 pounds of corn, pounds.....	32.2	29.8	35.5	35.5	34.2	30.2
Cost per 100 pounds gain, (Corn at \$3 per cwt, and Alfalfa at \$10 per ton).....	\$10.93	\$ 11.80	\$ 11.30	\$ 11.30	\$ 10.25	\$ 11.59
Cost per 100 pounds gain, (Corn \$1.07 cwt., and Alfalfa at \$8 per ton).....	\$4.61	\$ 4.98	\$ 5.29	\$ 5.29	\$ 4.31	\$ 4.88
Value of hay harvested.....			\$ 2.66	\$ 2.63		
Net return per acre of alfalfa Corn \$3 per cwt.						
Pork, \$15 per cwt.,.....	\$70.56	\$ 56.76	\$ 48.59	\$ 48.56	\$ 84.06	\$ 60.66
Net return per acre of alfalfa Corn at \$1.07 per cwt,						
Pork at \$7.00 per cwt.....	\$45.69	\$ 39.25	\$ 30.07	\$ 30.04	\$ 52.26	\$ 41.34

The very noticeable difference in the amounts of gain made by lots 5 and 6 was probably due to the fact that the pasture for lot 5 was divided which gave the alfalfa some chance for growth before the hogs were permitted to graze on it. The hogs in lot 6 had the alfalfa eaten into the crown continually.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Scottsbluff (continued).

Hogs on Alfalfa (continued).

Two different sets of prices were used in determining the returns per acre and the cost of gains. In one set, corn was valued at \$3 per hundredweight, alfalfa at \$10 per ton and hogs at \$15 per hundredweight. These were approximately market prices at the close of the experiment. The returns were also determined with corn at \$1.07 per cwt. (60 cents per bushel), alfalfa at \$8 per ton and hogs at \$7 per cwt., these being considered nearer the "normal" prices. Feeds were the only items of cost figured here. Such items as labor, interest and risk were not included.

It is important to note that the returns per acre of alfalfa were materially higher in all instances when calculated on the basis of the present high prices for grain and pork, than when calculated on the basis of "normal" prices.

PERSONAL

Messrs. O. F. Cook, C. S. Scofield, and C. B. Doyle left Washington August 10 for Haiti for the purpose of making a reconnaissance of the agricultural resources of the island. The duration of the trip will be about six weeks.

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DEMONSTRATIONS NON RECLAMATION PROJECTS.

FIELD NOTES.

Shoshone.

During the week ending August 4, 8 farm visits were made and 29 office calls were received.

An article was written for the local papers offering to assist farmers in obtaining sheep for feeding on the farm this fall and winter, and discussing the importance of manure. A list of the farmers who have sheep on the Shoshone Forest Reserve was obtained from the Forest Supervisor.

Arrangements were made for the cooperative shipment of 3 cars of cattle. Men who have pastures are being advised to hold their cattle till after the run of cattle from the range is over.

Uncompahgre,

During the week ending August 4, fourteen farm visits were made. Conferences were held with ten farmers and requests for service and information received from six.

Mr. E. C. Shroeder, a Holstein breeder of Morehead, Minnesota, spent one day on the project. He reports having for sale about 50 heifers of Holstein breed at \$250 and \$275.

One day was spent with Mr. Divilbliss, County Agent of Delta County, who covers a part of the project in his territory.

There is some objection on the part of the Fair Board regarding the expense of conducting a live stock sale at the fair. It is hoped that this objection can be overcome.

A meeting of the Montrose Grange was attended on Thursday night and a talk was given on the raising of sheep on the farm and the formation of a bull association.. Both these matters are arousing considerable interest. The Chamber of Commerce at Olathe has been agitating the matter of building a cheese factory at that point.

The price of butter-fat advanced to 40 cents at the Creamery during the week.

North Platte.

During the week ending August 11, 22 calls for assistance were received and 36 farm visits were made.

Three representatives from the Entomology Department of the State University are in the valley at the present time to assist in controlling the grasshoppers which are causing heavy losses in practically all parts of the valley. One farmers was visited during the week who had caught 63 bushels of grasshoppers with a hopperdozer.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

North Platte (continued).

These machines are being used extensively in the vicinity of Mitchell and assistance in making these was given a number of farmers. As yet but very little is being done in the Third Lateral district to control grasshoppers and it is probable the loss from this source will be considerable in that section.

Several farms were visited during the week on which small flocks of sheep are kept. Most of the farms are now keeping sheep for the first time. A number of other farms were visited on which sheep will be placed later on. There is a decided increase in the sheep industry on the project this year. On many farms the indications are that sheep will in a measure replace hogs. In one locality northwest of Morrill at least 75 per cent of the farmers have a few sheep. These sheep are kept in various ways, but, as a rule, most of them are being pastured on alfalfa, some are kept on native pastures, others are fed alfalfa hay in a dry lot. During the past spring the lamb crop has been rather short, not over 80 per cent due to the unfavorable weather. Thus far practically no loss has been caused by bloat on alfalfa pasture.

During the three months ending June 30, a total of 84 carloads of hogs were shipped from the valley as compared with 145 cars during the same period of 1916, a decrease of approximately 42 per cent.

Corn is now selling for from \$4 to \$4.40 per cwt. It is so high that most of the feed stores in the valley say they will not order any more at present prices. New barley is now available in limited quantities.

Mr. Propps, the Dairy Division representative in this state, spent 2 days on the project. He reports that during the past few months 116 dairy calves, 2 and 3 weeks old, were shipped into this state from Wisconsin. Only three of these calves were lost, and this loss was due to over feeding the calves after their arrival. They were on the road from 24 to 36 hours and were not fed enroute. All parties who shipped in the calves were well pleased with the undertaking. The largest number shipped in by any one man was 7.

On Monday of the week ending August 4, a visit was made to a farm at the western end of the project to which 20 young Holstein calves were shipped in 3 shipments. The shipments came from Watertown, Wisconsin. Three of the 20 calves died but the others did well and the farmer is well pleased with the undertaking. He expects to ship in some more calves this fall. The calves were 3 weeks old when shipped.

A visit was made to the farm of W. B. Buckingham who is now buying practically all the cream from the vicinity of Morrill and Henry. At the present time he is shipping the sour cream and making ice cream from the sweet cream. He is now making approximately 60

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DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

North Platte (continued).

gallons of ice cream daily, all of which is sold in the valley for \$1 per gallon, f.o.b. Morrill. He is now paying \$0.45 for sweet cream and \$0.38 for sour cream. At present the indications are that fewer cows are being milked on the project than last summer due to the high prices of feed. The farmers have had a tendency to let their cows dry up so they could turn them out on the range, thus reducing the feed bill. Mr. Buckingham says he is not able to get enough sweet cream to supply the demand.

A visit was made to the farm of Mr. Mulligan, at Henry, one of the largest swine growers on the project. During the past spring his pig crop was greatly reduced due to contagious abortion among his sows. He saved only 125 pigs from 90 sows. Most of the pigs came from 3 weeks to a month before farrowing time. This is the first time the trouble has occurred in Mr. Mulligan's herd, and as the sows received the same treatment during the winter as they always have, Mr. Mulligan is at a loss to know the source of the trouble. Several of the sows were rebred and aborted the second time. He is now planning to sell all his old sows and keep only gilts for next year. It is understood the same trouble occurred among the sows at the North Platte Sub-station of the State University and as yet the source of the trouble has not been determined.

Tieton.

The work of the week ending July 14 was divided between visits pertaining to the organization of the bull association and the care of milk to be sold to the Harwood cheese factory.

The price for butter-fat on creamery routes in the new cheese factory district rose to 42 cents at the end of the week. There are now three cheese factories operating in the Yakima valley, at Selah, Cowichee and Toppanish, all privately owned. The Harwood cooperative factory will start on the 16th and the people in the Naches and Moxee valleys are considering the organization of cooperative factories. There are also cooperative creameries in successful operation at Sunnyside and Prosser. The remaining butter-fat is handled in cream by the Yakima City Creamery, the Bradner Creamery of Seattle and the Mutual Creamery at both their Seattle and Toppenish plants.

Fat pigs were quoted at \$14.25 at the close of the week and prime steers at \$8.50 per cwt. Eggs are bought at 32 cents per dozen. When buying farmers pay \$55.50 per ton for oats, \$57.50 for rolled barley, \$71.50 for shelled corn, \$41.50 for shorts and \$35.50 for bran.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Tieton (continued).

The entire week ending July 21 was given to assisting at the new cooperative cheese factory at Harwood which began operations on Monday. Farm visits and revisits to the number of 129 were made, many conferences were held with farmers at the factory and several new patrons were secured.

This week is credited with being one of the hottest of the last ten years and even the nights were uncomfortably warm, an unusual occurrence in this valley. This condition made it very difficult to properly cool and keep milk. The irrigation water was over 70 degrees Fahrenheit several times, and the heat of the day lasted into the evenings and began very early in the mornings. The few wells provided very satisfactory cool water but in these cases the difficulty encountered was the securing of enough water for quick cooling. All cistern water was unusually warm.

The greatest difficulty encountered in the campaign for entirely acceptable milk at the factory was the fact that the creameries have been decidedly indifferent in regard to quality in cream and the change from selling indifferent cream twice or three times per week to properly cooling milk twice daily for daily delivery seemed in several cases not only impossible but undesirable. Some milk had to be returned to the farms, accompanied by proper explanations, suggestions and assistance in cooling the next milk with rearranged cooling facilities or cleaned milk houses.

Results at the end of the week, though not entirely acceptable, were decidedly encouraging. No patrons were lost, although one was advised to discontinue selling whole milk until better water cooling facilities could be secured. The factory received 1753 pounds of milk on Monday and approximately 2000 pounds on Saturday.

Practically all of the week ending July 28 was spent with the Harwood cooperative cheese factory in continuing the campaign for better milk and assisting the cheesemaker in operating the new factory. There was a satisfactory improvement in the quality of milk during the week. The milk received increased from approximately 2000 pounds at the beginning of the week to approximately 2350 pounds at the end. It might be noted that practically all the increase in the milk supply is due to the addition of new patrons. An even greater increase from the present patrons is anticipated from fall freshening cows.

It is now thought that the factory is through the most critical period. The milk supply, according to Mr. Fish, State Department of Agriculture Instructor for Creameries and Cheese Factories, is practically equal in quality to the supply of a majority of the factories in the state. Mr. Harry Doherty, the cheesemaker, is becoming acquainted with the milk and the conditions under which it is handled. The milk supply is gradually increasing and can be increased more rapidly as soon as it seems desirable.

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FIELD NOTES.

INVENTORY

Boards of Survey were recently appointed at all field stations of the Offices of Western Irrigation Agriculture and Demonstrations on Reclamation Projects. In the case of the latter office most of these boards consist of but the one representative of the office, but in some cases the representatives of both offices have been combined to make a board of three for the disposition of property belonging to either of these offices or to any other office of the Bureau.

Inventories recently received indicate that the functions of these boards of survey are not thoroughly understood.

Paragraph 9 of the Property Regulations of the Department requires that articles for which there is no further use and articles which have become unserviceable shall be submitted to these boards of survey for sale or disposition. Therefore, when the inventory includes such articles, it should be accompanied by a report of the board of survey on the regular form (copies of which have been sent all boards) showing the disposition of the property and accompanied by a list thereof. If the report indicates destruction of valueless articles, it should show that at least one member of the board was present when the property was destroyed.

When the inventory shows that property has been lost, stolen, damaged, or destroyed, Par. 8 of the Property Regulations requires a statement from the person who had custody thereof to make a certificate, on a separate sheet, showing (1) a list of the articles; (2) the circumstances attending their loss, damage, or destruction; (3) whether his fault or neglect or that of any employee was involved; and (4) if the property was lost or stolen, the action taken to recover it. When the value of the property exceeds \$10 the certificate shall be sworn to.

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WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Belle Fourche.

During the week ending August 11, the maximum temperature was 81, minimum 39, and precipitation .59 inch.

Harvesting in the dry land rotations was finished; oats in the irrigated rotations was harvested, and some harvesting was done in nursery, fields F and O.

Beets and potatoes in field A were hoed and potatoes furrowed.

Second cutting alfalfa in fields I, P and O, south of pond, was mowed and raked, and second cutting from field A was hauled in the new barn.

Corn in field K, and potatoes and sorghum in field O, were cultivated.

The ditch lands was mowed, garden cultivated, the grounds around the shrubery were evened up, and alfalfa and brome grass on the dry was hoed.

Throughout the week some of the men were busy hauling sand and water, repairing machinery, and cleaning up.

Results of Hog Pasturing During Spring Period.

According to a report made by Mr. Bober, the spring period of alfalfa pasturing with fall shotes was terminated July 11, at the close of a period of 44 days. The experiment contained 8 groups of hogs, each group having grazed a quarter-acre of alfalfa pasture. The 8 groups comprised 4 duplicate lots, of which one received no grain; one, 2 per cent barley; one, 2 per cent shorts and one, 2 per cent corn. Some of the data in Mr. Bober's report are summarized in the following table, in which the figures show the averages of duplicate lots and are calculated to an acre basis.

Lot numbers.....	1 & 5	2 & 6	3 & 7	4 & 8
Grain ration.....	none	2%barley	2 shorts	2% corn
Actual number of hogs.....	6	8	8	8
Number of hogs per acre.....	12	16	16	16
Average live weight per acre, pounds.....	1576	2198	2222	2178
Average daily gain, pounds....	0.24	1.04	1.10	0.95
Total gain per acre, pounds....	128	717	779	674
Grain fed, per acre, pounds...	none	1928	1928	1880
Grain fed per pound of gain, pounds.....	none	2.69	2.47	2.79
Net returns per acre:				
Grain 1¢, pork 7¢ per pound...	\$ 8.96	\$30.91	\$35.25	\$28.38
Grain 3¢, pork 12¢ per pound..	\$15.36	\$28.20	\$35.64	\$24.48

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Field Notes.

Belle Fourche, (continued).

Results of Hog Pasturing During Spring Period, (continued).

It is possible with the above data to calculate the net returns per acre on the basis of any prices desired. Mr. Bober reports a local price of 12 cents a pound for hogs, and this price is used in the last line of the above table. It is to be noted that the returns per acre in any of the grain-fed lots do not differ greatly whether they are calculated on a basis of "normal" prices or on a basis of 3-cent grain and 12-cent pork. It seems, moreover, that 12 cents is somewhat low, on the basis of Omaha prices and the cost of marketing. If 13 cents, or even $12\frac{1}{2}$ cents, were used in the above calculations, the returns per acre in the grain-fed lots would all be in favor of the present high prices.

The favorable results secured with shorts should be noted. This feed, at the time the experiment was in progress, was lower in price than either corn or barley, so that its use in this test was more economical than that of either of the other feeds.

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Field Notes.

Minidoka.

During the week ending August 4, a number of complaints regarding the potato crop were received. It is claimed that the plants are all going to vines with no tubers being formed. However, as this complaint has been made every year, it is believed that there is no cause for uneasiness.

The surplus of pure bred ewe lambs has been purchased by project farmers. The supply is not equal to the demand. Practically all grade ewe lambs on the Project will be kept for breeding purposes. There is no anxiety to sell the wethers as the farmers hope to exchange these for ewes when the range bands come in.

During the week ending August 11, a number of pure bred live stock farms were visited in response to earlier requests regarding the possibility of a cooperative shipment of show stock to the State Fair. There is much interest among the breeders in making up such a shipment and in fitting their stock for the local fairs.

The cutting of the second crop of hay began during the week. The yield will be good.

The expected labor shortage has not yet been evident on the Project. If such is experienced here this season it will be during the latter part of September and in October.

Tieton.

Seventy one farms were visited during the week ending August 4. One call for assistance was answered by a farm visit and 12 conferences were held.

A hogging-off demonstration was begun with Mr. Lewis, in which 48 spring pigs will be given separate lots of peas and barley, wheat and corn.

Messrs. Chaplin and Lockry, of the U. S. Dairy Division, visited the Harwood cheese factory on Monday and Tuesday, and Mr. Jamieson, Dairy Field Agent, spent the greater part of the week on the Project in cooperation with field work connected with the cheese factory, bull associations, and general dairy conditions.

Local creameries have advanced the price for butter-fat on the routes to 43 cents, paying 45 cents for butter-fat delivered to the factory. The Selah cheese factory is buying milk at \$1.80 per cwt. specifying only that it is as drawn from the cows, i.e., not skimmed and unadulterated. This method of buying was gladly accepted by many patrons who were dissatisfied with cream testing done by creameries.

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Field Notes.

Uncompahgre.

During the week ending August 11, two trips were made to forest reserves, one to the Uncompahgre and the other to the Battlement reserve, both of which are adjacent to the project. Very few of the project farmers, however, range on the latter reserve. The Uncompahgre range is rather dry so that the feed is quite poor. There is an abundance of feed on the Battlement range but there is danger of running cattle on it because of the large quantity of lark spur and poison hemlock. This range has been getting more rain.

One case of retention of urine in pigs was reported and investigated during the week. Several shotes had been lost and two were affected at the time of the visit. It was not possible to locate the cause of the trouble so that the veterinarian was called to treat the case. The shotes had been run on pasture without grain.

Considerable rain has fallen during the week. Much of the second cutting of alfalfa was caught in the field.

County Agent Divilbliss, of Delta County, spent one day on the project, gathering information on live stock work carried on.

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FIELD NOTES.

PROSPECTIVE DEMAND FOR MEAT ANIMALS.

That the United States will be called upon to increase the production of meat animals in order to offset the extensive reductions in European herds is indicated in the following statement, issued August 21, by the Food Administration:

"A total decrease of 115,005,000 in the world's meat producing animals is shown in a comparison of present with prewar conditions. While the increase of cattle in the United States was 7,090,000 during this period, the total world decrease was 28,080,000. Sheep decreased 3,000,000 in the United States, and 54,500,000 in the world. Hogs increased 6,275,000 in the United States, but decreased 32,425,000 in the world supply.

"The demand made by war on the American meat supply is further shown in the growth of our meat exports for the year ending June 30, 1916, which were 1,339,193,000 pounds as compared with 493,848,000 pounds for a three-year prewar average. These exports have chiefly gone to our allies, whose capital stock of animals has decreased by 33,000,000 head.

"Although the European countries have drastically reduced meat consumption among nonwar workers, this saving has been overcome by the greatly increased demands to supply men in the armies and shops, and the women who have taken up physical labor. This demand has been so great that Europe has been eating into its herds at an alarming rate, and this condition will continue to grow worse each day as the war progresses. This is a problem that America must meet, not only during the war, but after it has ended.

"The problem facing the American people is not only one of supplying the immediate demand of the allies, but one which is more far-reaching in its future significance. As the war goes on there will be a constant lessening of the capital stock for food animals of the world. Among our western allies, the demand outruns further every day the decreasing production, and as shipping becomes further shortened by continued submarine destruction, less tonnage can be devoted to fodder, and further reduction of the herds must ensue."

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Total Crop Values on Reclamation Projects in 1916.

According to estimates made by the Reclamation Service, the total farm value of the crops produced on 24 reclamation projects in 1916 was \$32,767,790. These crops were produced on 23,062 farms with an average cropped area of 37 acres. The average value per acre of crops harvested ranged from \$11.88 (on the Belle Fourche) to \$73.04 (on the Sunnyside). The average for all projects was \$38.25. This average compares with \$23.50 in 1914. The average value of crops per farm ranged from \$437 (on the Umatilla) to \$1970 (on the Salt River). The average for all projects was \$1421. The latter figure compares with \$936 in 1914.

The average values of crops on the different projects were calculated on the basis of the estimated yields and the local prices on each project in the autumn of 1916. The average value of crops per acre is influenced by the kind of crops, the yields and the local prices; and the corresponding value per farm is influenced by these three factors and by the cropped acreage per farm. All these factors vary on the different projects. A tabulated statement of the estimated total crop values on 24 projects in 1916 is given below:

	Cropped Acreage	Number of farms	Farm Value of Crops		
			Total	per acre	per farm
Salt River.....	173,359	4289	8,435,719	\$ 48.65	\$ 1970
Yuma.....	28,283	790	1,435,403	50.75	1820
Orland.....	7,011	384	342,339	48.83	891
Grand Valley.....	1,561	76	54,692	35.03	720
Uncompahgre.....	48,352	1320	1,949,529	40.32	1477
Boise.....	72,581	1727	2,327,494	32.07	1347
Minidoka.....	81,362	1938	2,800,431	34.50	1446
Huntley.....	18,581	553	489,071	26.32	884
Milk River.....	4,592	64	70,016	15.25	1094
Sun River.....	4,700	158	86,950	18.50	550
Lower Yellowstone.....	6,020	186	124,586	20.70	669
North Platte.....	74,766	1189	1,633,390	21.85	1373
Truckee-Carson.....	38,249	584	791,446	20.70	1355
Carlsbad.....	14,500	455	399,901	27.58	879
Hondo.....	1,219	28	32,200	26.42	1150
Rio Grande.....	61,818	1638	2,893,740	46.81	1764
Umatilla.....	3,900	320	139,800	35.84	437
Klamath.....	29,351	350	509,865	17.37	1457
Belle Fourche.....	46,909	802	557,319	11.88	695
Strawberry Valley.....	25,066	1378	1,320,135	52.70	958
Okanogan.....	5,242	458	328,385	62.64	717
Sunnyside.....	59,449	2682	4,341,940	73.04	1620
Tieton.....	21,000	1100	1,102,536	52.50	1002
Shoshone.....	28,695	593	600,903	20.94	1013
Total, 24 projects.....	856,566	23062	\$32,767,790	\$ 38.25	\$ 1421

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

RANGE EWES FOR SALE

There is given below a list of a few of the sheepmen who have advised the Forest Service officials regarding breeding ewes which will be offered for sale this fall. This list is by no means complete. It is given here chiefly as a suggestion as to some of the places where fieldmen might seek information relative to securing ewes for farmers. Doubtless some of the fieldmen already have obtained information on this point, through the local forest officers and others. Incidentally, this list gives some indications as to the prices asked for ewes of various ages and breeds. These prices presumably are to be effective at shipping points.

The forest service officials have not yet received their data from the ranges east of the Mountains, so that the following list contains no names of sheepmen near the eastern projects.

	Post Office	Number	Breed	Age	Shipping Point	Price
<u>TRUCKEE-CARSON PROJECT</u>						
Williams Estate.....	Fallon	1,000	Straight Merino	6-7	Elko,	Market
Grundel & Henderson	Elko,	800	Merino	6	Halleck	\$9.00
Stewart & Carter....	Elko,	1,000	Merino and coarse wool	6 up	Elko,	\$12.00
Saval L. & L. Co....	Elko,	1,500	G. Rambouillet	6	Halleck	\$ 8.00
<u>YAKIMA PROJECTS.</u>						
George Chambers,....	Selah,	250	G. Lincoln	7	No. Yakima	\$10.00
Coffin Bros.,.....	No. Yakima	2,000	Merino-Rambouillet,	6-7	No. Yakima,	\$12.50
George Jackson.....	No. Yakima,	1,250	Lincoln-Rambouillet,	2-5	Okanogan,	\$15-16
Peter Agor.....	No. Yakima,	800	Rambouillet & Shrop,	6-8	No. Yakima,	Market
K. O. Kohler.....	Ellensburg	230	Hampshire-Shrop	3-4	Ellensburg,	\$15.00
C. M. Longmire.....	No. Yakima,	800	Rambouillet & Shrop,	7	No. Yakima	\$ 8.00
<u>UNCOMPAHGRE PROJECT</u>						
Wm. Whitbeck	Vernal, Utah	2,700	Ramb't-Cotswold	All	Tennessee Pass, Colo.	cwt. \$ 7.50
Charles Hedd.....	Lasal, Utah	2,100	Rambouillet	5-8	Ivanhoe, Colo.	\$10.00
R. Chapman.....	American Fork, Utah	700	Cotswold,	6-8	Colton, Utah	\$ 9.00
B.S. Hammond.....	Lasal, Utah	1,800	3/4 Cotswold	2-5	Thompsons, Utah	\$15.00
L. H. Redd.....	Blanding, Ut.	1,250	Merino	6	Ivanhoe, Colo.	\$10.00

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Field Notes.

Range Ewes for Sale (continued).

	Post Office	Number	Breed	Age	Shipping Point	Price
<u>IDAHO PROJECTS.</u>						
Walter C. Little....	Emmett,	500	P.B. Rambouillet	6	Emmett	\$11.00
Butterfield Live	Weiser,	500	G. Merino	Mixed	Weiser,	\$9-\$15
Stock Farm.....		400	P.B. Hampshire			
		100	E.B. Lincoln			
J. A. Mabey.....	Bancroft,	400	Ramb.-Cotswold	7	Bancroft,	Market
D. A. Taylor.....	Mackay,	7,000	Mixed	2-6	Mackay and Soda Springs	Market
David Gemel.....	Pocatello	3,000	P.B. Cotswold	1-3	Mackay	\$30.00
J. F. Edwards.....	Idaho Falls	3,000	Rambouillet	1-4	Idaho Falls,	\$15.00
		17000	Cotswold		Soda Springs, and McCammon,	
John Spencer.....	Wendell,	50	P.B. Hampshire	4-6	Wendell,	\$22.50
I.G. Lincoln.....	Filer,	1,600	Cotswold-Ramboui-	5-7	Filer and Mur-	\$10.50
			llet,		taugh,	
Mayfield L. & L. Co.	Mayfield,	300	Cotswold	5-6	Hill City,	\$12.00
		150	Rambouillet			
Deseret Sheep Co., c/o O.F. Bacon	Nyssa, Oreg.	100	P.B. Hampshire	?	Council, Idaho	\$20.00
		300	P.B. Cotswold			

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WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Huntley.

The maximum temperature for the week ending August 18 was 95, and the minimum 36.

The weather continued hot and dry during this period and a large amount of irrigation for most crops was required. Second crop of alfalfa was harvested and this was cured in excellent condition.

Threshing of dry land grains was started. Yields of winter wheat at the experiment farm range from 7 to 32 bushels per acre. The grain is generally of rather poor quality, being shrunken and below weight. Yields of spring crops on dry land are low, and in many cases in this district are a complete failure. Winter wheat in the district adjacent to the experiment farm is averaging from 10 to 15 bushels per acre, while the highest yield reported from a large field was 28 bushels per acre.

Yields of clover hay in field L-I, harvested July 3 and L-II were as follows:

Crop	Plat No.	Tons per acre
Alsike clover.....	L-I-2	1.60
do do	-4	.67
White clover.....	-6	.36
do do	-8	.17
Red clover.....	-10	1.81
do do	-12	.20
Alsike clover.....	L-II-2	.94
do do	-4	.42
White clover.....	-6	.30
do do	-8	.40
Red clover.....	-10	1.79
do do	-12	.32

In the irrigated rotations, fields K and L-IV, rape was seeded in the two plats of corn, rotation 69, on August 1. The second cutting of alfalfa was harvested the first week of August.

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WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Belle Fourche.

During the week ending August 18, the maximum temperature was 95, minimum 54 and precipitation 1.08 inches.

The second cutting of alfalfa from fields I, P and O, was cocked and hauled in, the first part of the week. Irrigation of the irrigated rotations, hog pastures in field K, potatoes, beets and corn in field O, alfalfa in field P, and garden and grounds was finished.

Harvesting in the irrigated rotations, nursery on the dry land, and field O, is about finished and threshing the dry land rotations was completed. The yields of the grain on the dry land are summarized below:

	<u>Maximum</u>	<u>Minimum</u>	<u>Average</u>
Wheat.....	12.6	2.0	7.4 bushels
Oats.....	28.6	3.4	16.8 "
Barley.....	28.1	15.3	22.9 "

Messrs. Clark and Redding of the Cereal Office visited the station the latter part of the week.

Truckee-Carson.

During the three weeks ending August 18, the maximum temperature was 98, minimum 48, and precipitation .01 inch.

The alfalfa and sweet clover plats were cut during the week ending August 4, and were hauled and stacked the following week. The alfalfa yield per acre, from 31 plats outside the "Y" series, averaged 2300 pounds.

The yield of 12 plats of sweet clover having a total area of 4.7 acres, was 3415 pounds. The sweet clover is grown on plats not well suited to alfalfa. The yields of these plats is shown in the following table:

<u>Plat</u>	<u>Area, acre</u>	<u>Yield per acre, pounds.</u>
D6	.55	1355
H9	.24	625
H10	.24	271
H11	.41	513
G1	.40	713
G3	.40	1440
G4	.40	288
G5	.40	1500
B1	.42	274
B2	.42	417
B3	.42	333
B4	.42	572

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WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Truckee-Carson, (continued)

The treated plats of the "Y" series have again produced a greater yield than the untreated plats, although it cannot be said that the yields even of the treated plats are sufficient to justify the expense of the treatment. The average yields of the half-acre plats are shown in the following table, in which the average of triplicate treated plats is compared with the yield of the adjacent check plat in each instance.

Treatment.	Average yield, 3 treated plats.	Increase in yield over check.
	<u>Pounds per acre</u>	
Tile, gypsum and manure.....	1430	200
Gypsum and manure.....	1700	170
Gypsum.....	670	590
Sulfuris acid.....	210	210

The pasture experiment with pigs on sweet clover and alfalfa has now been conducted 7 weeks. The pigs on sweet clover pasture have made a net gain of 224 pounds, consuming 518 pounds of barley and tankage, a gain of 1 pound for each 2.3 pounds of grain. The pigs on alfalfa pasture have gained 196 pounds in the same period, using 518 pounds of barley and tankage, a gain of 1 pound of live weight for each 2.64 pounds of grain. During the last three weeks of this period, the pigs on sweet clover pasture have made greater gains than those on alfalfa.

NOTICE

Appointments.

In a recent memorandum to heads of offices, the Chief of Bureau calls attention to the large number of requests for appointments effective prior to the date of recommendation for appointments, and asks that recommendations be submitted, as far as practicable, before the appointee commences work.

Stricter adherence to this rule by our field men is urged.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.Alfalfa Pasturing and the Prices of Grain and Hogs.

For some time prior to the marked advance in grain prices several months ago, few good irrigation farmers questioned the possibility of securing satisfactory returns by pasturing 7 cent hogs on alfalfa supplemented with 1 cent grain. When the price of grain began to rise, farmers began to doubt the practicability of feeding grain to hogs. The higher grain prices became, the greater was the dissatisfaction of the swine growers. Hogs were marketed prematurely in great numbers. Then came increased prices for hogs, and continued advances in grain prices.

As has been reported in several recent issues of the Weekly Bulletin, the hog pasturing experiments in progress this summer are showing that pasturing alfalfa with hogs and feeding a supplementary ration of grain produces as good returns under present prices for grain and hogs as it did under the normal prices of "1 and 7." In other words, the price parities are reflected in the results of the pasturing tests.

Present economic conditions make it necessary for us to think in larger figures than we are accustomed to. Twenty cent hogs seemed a long way off a year ago, but that price was paid recently at Chicago. It is not improbable that our "normal" figures will have to be nearly trebled in our calculations during the next year or two.

In order to facilitate price comparisons and calculations of price equivalence, four tables have been prepared to accompany this article. The figures in these tables are not based on invariable data, but nevertheless they should be useful in making calculations with reference to projected alfalfa-pasturing enterprises.

Basic figures.— Alfalfa pasturing experiments have been in progress at three of our field stations for several years. In some of these experiments fall pigs are pastured on alfalfa from about May 1 until about July 1, when they are replaced by spring pigs which remain on the pasture until early September. Throughout the entire season the pigs are fed a 2% ration of corn, barley or other grain. Speaking generally, the different grains have not differed widely in their efficiency. The results at these three field stations in the experiment where a 2% ration of corn was used have averaged as follows:

Station	No. of lots	No. of years.	Average gain per acre lbs.	Average Lbs. corn per cwt. gain.
Scottsbluff.....	10	4	3191	243
Huntley.....	3	3	2519	268
Belle Fourche.....	3	3	1939	295

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Alfalfa Pasturing and the Prices of Grain and Hogs (continued).

The results at Scottsbluff, as shown, have been the most favorable. They probably represent what can be done under optimum conditions. In the tables following where the Scottsbluff results are used, the gain has been reduced from 3191 to 3000 pounds per acre, and the grain requirement has been increased from 243 to 250 pounds per 100 pounds of gain. These changes are made in the interests of conservatism and easy calculation.

The alfalfa pasturing tests conducted by the fieldmen in cooperation with farmers have not produced many dependable figures with reference to the gain per acre of alfalfa, largely because in many of these tests the hogs have had an excess of pasture and some hay has been harvested from the fields used. We have, however, obtained some data showing the grain requirement in these cooperative tests. In 1915 and 1916, in a total of 29 cooperative hog pasturing tests on 6 projects, in which various sized rations of various grains were used to supplement alfalfa, the grain required per 100 pounds of gain ranged from 205 pounds to 497 pounds, the arithmetic mean being 327 pounds. In view of these results, together with those secured at the experiment farms, it probably would be conservative to assume that on a practical farm under fair to good conditions a gain of 2,000 pounds per acre of alfalfa should be obtained, and that 350 pounds of a supplementary grain ration should produce 100 pounds of gain.

The following, then, are assumed as basic figures:

	Gain per acre lbs.	Pounds of grain required.	
		Per 100 lbs. gain	Per Acre.
Optimum conditions	3,000	250	7,500
Fair to good conditions	2,000	350	7,000

These figures are somewhat arbitrary, but from the available data they are believed to be on the side of safety.

Cost of grain and pasture per cwt. gain.— From the above assumed basic figures tables A and AA have been prepared to show the cost of grain and pasture per 100 pounds of gain, on the basis of 9 different prices for grain and 3 different rental values for alfalfa pasture.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Alfalfa Pasturing and the Prices of Grain and Hogs (continued).

Table A.- Optimum conditions (3,000 pounds gain from 1 acre of alfalfa pasture and 7,500 pounds of grain).

Cost of grain per pound, cents	Cost of grain and pasture per cwt. gain.		
	Rental value of alfalfa pasture per season.		
	\$10 per acre	\$15 per acre	\$20 per acre
1.0	\$ 2.83	\$ 3.00	\$ 3.17
1.5	4.08	4.25	4.42
2.0	5.33	5.50	5.67
2.5	6.58	6.75	6.92
3.0	7.83	8.00	8.17
3.5	9.08	9.25	9.42
4.0	10.33	10.50	10.67
4.5	11.58	11.75	11.92
5.0	12.83	13.00	13.17

Table AA.- Fair to Good Conditions (2,000 pounds gain from 1 acre of alfalfa pasture and 7,000 pounds grain).

Cost of grain per pound, cents	Cost of grain and pasture per cwt. gain.		
	Rental value of alfalfa pasture per season.		
	\$10 per acre	\$15 per acre	\$20 per acre
1.0	\$ 4.00	\$ 4.25	\$ 4.50
1.5	5.75	6.00	6.25
2.0	7.50	7.75	8.00
2.5	9.25	9.50	9.75
3.0	11.00	11.25	11.50
3.5	12.75	13.00	13.25
4.0	14.50	14.75	15.00
4.5	16.25	16.50	16.75
5.0	18.00	18.25	18.50

In both of the above tables it is evident that the rental value of alfalfa pasture is of relatively little importance, as compared with the price of grain, in the cost of producing gains. Each dollar per acre added to the rental value increases the cost of gain only 3 cents per cwt. under the assumed "optimum" conditions and 5 cents per cwt. under the "fair to good" conditions. Each half cent increase in the price of grain, however, adds to the cost per cwt.

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Field Notes.

Alfalfa Pasturing and the Prices of Grain and Hogs(continued).

of gain \$1.25 under "optimum" conditions and \$1.75 under "fair to good" conditions. These figures help to show why some farmers secure profitable returns from alfalfa pasture at the same time that others lose money. The conditions, which include the character, care and management of the fields and hogs, determine the degree of success secured under various economic circumstances.

Returns per acre of pasture.— With the use of the same assumed basic figures, tables B and BB have been prepared to show the returns per acre of alfalfa pasture on the basis of 9 different prices for grain and 14 different prices for hogs. The total values of the gains per acre are shown near the top of each table. These values, less the total cost of grain, shown in the second column from the left, are given in the body of each table as the returns per acre of alfalfa pasture. These calculations are made by the same method as has been used in the past under normal conditions, and the figures show merely the gross returns. Blank spaces indicate that the cost of the grain is equal to or greater than the value of the gains. (In the figures showing returns per acre in table B, fractions have been omitted because of space limitations).

Table B.— Optimum Conditions (3,000 pounds of gain from
1 acre of alfalfa pasture and 7,500 pounds of grain.

Cost of grain per lb., cents	Total cost of grain	Price of Pork, per pound, cents.													
		7	8	9	10	11	12	13	14	15	16	17	18	19	20
		Value of gains per acre, Dollars.													
		210	240	270	300	330	360	390	420	450	480	510	540	570	600
Returns per acre of alfalfa pasture, Dollars.															
1.0	\$ 75.0	135	165	195	225	255	285	315	345	375	405	435	465	495	525
1.5	112.5	97	127	157	187	217	247	277	307	337	367	397	427	457	487
2.0	150.0	60	90	120	150	180	210	240	270	300	330	360	390	420	450
2.5	187.5	22	52	82	112	142	172	202	232	262	292	322	352	382	412
3.0	225.0	...	15	45	75	105	135	165	195	225	255	285	315	345	375
3.5	262.5	...	...	7	37	67	97	127	157	187	217	247	277	307	337
4.0	300.0	30	60	90	120	150	180	210	240	270	300
4.5	337.5	22	52	82	112	142	172	202	232	262
5.0	375.0	15	45	75	105	135	165	195	225

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Field Notes.

Alfalfa Pasturing and the Prices of Grain and Hogs, (continued).

Table BB.- Fair to Good Conditions (2,000 pounds of gain from
1 acre of alfalfa pasture and 7,000 pounds of grain.

Cost of grain per lb., cents	Total cost of grain	Price of Pork, per pound, cents.															
		7	8	9	10	11	12	13	14	15	16	17	18	19	20		
		Value of gains per acre, Dollars.															
		140	160	180	200	220	240	260	280	300	320	340	360	380	400		
Returns per acre of alfalfa pasture, Dollars.																	
1.0	\$ 70	70	90	110	130	150	170	190	210	230	250	270	290	310	330		
1.5	105	35	55	75	95	115	135	155	175	195	215	235	255	275	295		
2.0	140	...	20	40	60	80	100	120	140	160	180	200	220	240	260		
2.5	175	...	...	5	25	45	65	85	105	125	145	165	185	205	225
3.0	210	...	...	...	...	10	30	50	70	90	110	130	150	170	190
3.5	245	...	...	...	...	...	...	15	35	55	75	95	115	135	155
4.0	280	...	...	...	...	...	...	...	...	20	40	60	80	100	120
4.5	315	...	...	...	...	...	...	...	...	...	5	25	45	65	85
5.0	350	...	...	...	...	...	...	...	...	...	...	...	10	30	50

Comparison of the figures in table B and BB shows the advantages of efficient utilization of pasture and grain. Where hogs gain 3,000 pounds per acre of alfalfa and the grain requirement is 250 pounds per cwt. of gain, the value of the gains exceed the total cost of the grain at 5 cents a pound when hogs are worth 13 cents a pound. But under the less favorable conditions, as shown in Table BB, hogs must be worth 18 cents a pound if the value of the gains is to exceed the total cost of grain at 5 cents a pound. Furthermore, under "optimum" conditions (Table B) an increase of 1 cent a pound in the price of hogs increases the return per acre of alfalfa \$30, whereas the corresponding increase under "fair to good" conditions (Table BB) is only \$20.

The tables given above will serve not only as basis for making calculations regarding alfalfa pasturing enterprises but also to show a convenient method of tabulating figures based on data other than that used here. The greatest use, perhaps, to which such tables can be put is to indicate the importance and value of high efficiency in pasturing alfalfa with hogs under any price conditions.- F.D.F.

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Field Notes.

Boise.

The directors of the Boise Valley Testing Association met during the week ending August 11, to consider the employment of a tester for six months, since no one has yet been found to take the work for a year. It was decided that it would not be advisable to start the work until a man could be found who would contract for a year's work.

Blackleg has appeared on the Project, one man losing 2 calves out of 6, and two other men reporting the loss of one each.

Three days have been spent this week in an effort to ascertain whether or not there would be sufficient interest in a cooperative shipment of lambs and sheep from the Boise Valley this fall to justify an attempt to organize such a shipment. At present this seems doubtful due to the fact that sheep owners rather generally plan to hold over all their lambs for the wool or hope to exchange their wethers for ewes.

The Idaho County Agents have held their annual conference in Ada and Canyon counties during the week ending August 18, spending 4 days in field conferences, visiting demonstrations, etc. and 2 days in an office conference in Boise. Besides the County Agents and the State Leader, representatives from the State College of Agriculture, the Agricultural Extension office, and the Office of Demonstrations on Reclamation Projects attended all or part of the conferences.

Minidoka.

A part of the week ending August 18 was spent in conference with the County Agents and Extension workers of the State of Idaho. The portion of the conference attended was held in the form of itinerant field conferences on the Boise Project, visiting stock farms holding the discussions in the field. Attention was called to special improved methods and few demonstrations of type were given. One day was devoted to a silo excursion and conference. The work was of much value, especially to the agents who are new in the field and also to all others who have not been in a position to keep informed on the changes of type in the different breeds. At the present time, Idaho has a total of 14 county agents.

Owing to the rush of work in the Interior Department, it is not probable that the Idaho lands entered under the 640-Acre Homestead Act will be classified this year. The sentiment in Idaho is somewhat against this act and, because of the action of the State Legislature in asking that this land be left open, it has been popularly supposed that the Idaho lands would not be classified.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Uncompahgre.

During the week ending August 18, 10 farms were visited and requests for service were received from 8 farmers.

There have been several heavy rain storms in the valley during the week so that travel has been difficult. Some of the wheat has lodged on account of the rain. Most of the second cutting alfalfa on the lower half of the project has been put up. The farmers are more enthusiastic over the outlook for a potato crop than they were a few weeks ago. One carload of early potatoes sold during the week for \$2.80 per cwt. This is the first load to be sold from the project this year.

The labor situation seems to be a serious one for the fall harvest. All that can be done is taken up by the local Ways and Means Committee. There has been a great deal of agitation on part of the Denver women to send some women to the Western Slope and assist in the harvesting work. This proffered help is being turned down as it is felt that the women would not be strong enough to do the work.

The alfalfa weevil, reported at Paonia, is causing considerable concern among the local farmers. It is thought by some that it would be advisable to quarantine against that district and attempt to have the trouble evaded. There has been \$6,000 set aside by the State to assist the fighting of the pest.

Some time has been spent in assisting with the arrangements for the live stock sale at the Fair, which has been decided to be held. The Fair Association has voted \$250 to assist in this work.

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WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Yuma.

During the week ending August 11, the maximum temperature was 108, minimum 74 and greatest daily range 32. The high humidities which have been current during the past few weeks have now abated and the effect on the development of Egyptian cotton over the project is very noticeable. The extreme rank vegetative growth seems to be checking and many flowers are setting for a top crop.

Thirty-eight acres were irrigated.

All date plantings, the deciduous orchard, and miscellaneous nurseries were cultivated. The usual amount of crop cultivation and hoeing that is required at this season was in progress. Field C22 was plowed. Sorghum varieties on borders D13 to 17 inclusive were thinned and also corn varieties on field C35.

Many of the peach varieties in the deciduous orchard that are bearing fruit are ripening at this season showing quite different dates of maturity than is generally found of these varieties in other climates.

Mr. T. H. Kearney, Mr. S. H. Hastings and T. K. Wildermuth from the Sacaton station visited the station early in the week. Mr. Blair accompanied the party to Imperial Valley points and to Chula Vista, California.

During the week ending August 18 the following temperatures were recorded, maximum 106, minimum 61 and greatest daily range 45.

Thirty-seven acres were irrigated.

Field cultivation and hoeing continued in the usual abundance. Weeds were hoed from a part of the irrigation system.

Alfalfa hay was harvested from fields, B6 to 8, C21 and 24, and D6 to 9, 11 and 12.

Mr. H. L. Shantz visited the station early in the week. Mr. G. M. Crawford arrived here on the 23rd to replace Mr. Homer Martin in handling the work of plant moisture requirement investigations. Mr. Martin is being transferred to the Chula Vista station.

Mr. G. P. Rixford spent Friday and Saturday at the experiment farm in going over the fruit that is being produced on the hybrid fig seedling that are fruiting this season.

During the week ending August 25, the maximum temperature was 107, minimum 56 and greatest daily range 47.

Hay harvest of plats cut last week was completed and Sudan grass was harvested from plats D10 and C26. A great deal of hoeing was done during the week and plat C36 was plowed.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Yuma (continued).

A topping experiment of rank grown Egyptian cotton was begun on a cooperative field near Somerton, Arizona. At the present date, cotton is setting fruit in very satisfactory amounts. It seems that top crops on overgrown Egyptian cotton will be good.

It might be of interest to some other stations to note that the Fuller and Johnson power lawn mower purchased at this station has proved extremely satisfactory. In this case the machine is being used on a Bermuda grass lawn.

Mr. P. V. Cardon and Mr. W. J. Morse visited the station for several days during the week.

San Antonio.

During the week ending August 18, the maximum temperature was 101, minimum 70, and greatest daily range 30. There was no precipitation.

Plowing of oat stubble on field C4 was completed and corn stubble on field B4 was plowed. Johnson grass on waste land was cut, raked and hauled. Some weeding was done on the rotation fields and in miscellaneous fields.

During the week ending August 25, the maximum temperature was 107, minimum 64, and greatest daily range 35. A shower of .32 inch came on the afternoon of the 23rd. This was beneficial in that it cooled the atmosphere but was insufficient to be of value to growing crops. Drought is becoming serious again. Cotton has ceased to grow and is wilting badly each day and appears to be on the verge of drying out. Sorghum has made no growth for some time and is beginning to fire badly.

Corn stubble on field C3 was plowed. Practically no other team work was done during the week. All summer plowing has been completed. Some weeding was done in orchards and in the farm roads. Cotton in the variety test on field F3 was picked. This cotton will make a reasonably good yield. There was considerable variation in the time of opening with the different varieties. In that respect the varieties ranked in the following order: Half and Half, Acala, Triumph, Lone Star and Rowden.

Belle Fourche.

During the week ending August 25, the maximum temperature was 93, minimum 43 and precipitation 0.

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WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Belle Fourche, (continued).

The few remaining plats in the irrigated rotations, seed alfalfa north of the pond, oats in field P, variety grains in field O, were harvested during the week and harvesting oats in the new 80 acres, was commenced.

Oats followed by fall-seeded alfalfa in the irrigated rotations were threshed. Brome grass and alfalfa from miscellaneous fields on the dry was threshed.

One four-horse team was busy three days plowing in the dry land rotations.

Potatoes in field A and varieties in field O were cultivated.

All roads and alleys in field A were hoed, the grounds cleaned up, and alfalfa from the ditch bank was hauled in.

Some time was put in hauling sand, making ditches, caring for stock and hauling material from town.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Shoshone.

During the week ending August 18, 20 farm visits were made, 10 office calls were received and 8 other conferences were held.

A cooperative shipment of 2 cars of cattle sold on the Omaha market August 13. Two aged bulls in fair condition sold for \$6.90. Spring calves in ordinary condition sold for \$5.50. Thin cows sold for \$5.75; fairly good cows for \$7.00 and a fat Hereford cow for \$7.85. Steers sold for \$5.75 to \$7.85. The expense of shipping was 70 cents per cwt.

One of the farmers who in the spring of 1915 sowed 2 acres of a mixture of brome grass, orchard grass, Kentucky blue grass, and Alsike clover, has been carrying 25 ewes and 18 lambs on the 20 acres since April, except for 12 days when they were out while the pasture was being irrigated. The pasture is in excellent condition now.

Grain cutting has started. There will be some excellent yields this year. The second cutting of alfalfa will be much heavier than the first.

During the week ending August 25, 17 farm visits were made, 7 office calls were received, and 4 cows were tested.

There have been several failures with grass pastures which were seeded this spring, but in practically every case where the grass failed other crops also failed. On one lot grass was sown on sweet clover and where the sweet clover lived the grass is also living. Failure is in every case due to lack of proper irrigation. But this season has been such as to render proper irrigation unusually difficult, because the spring was so late as to cause crops to be seeded late and the hot windy weather which soon followed made it difficult for most farmers to keep the soil moist.

Uncompaghe.

The week ending August 25 was spent chiefly in working on the Fair exhibits of live stock and in assisting in the arrangements for the sale. One day was spent in visiting farmers who had stock to exhibit and who had animals to enter in the sale. The interest in the fair is exceptionally good considering the amount of work to be done on the farms.

The second period of the hog feeding test on the farm of Frank Nash was finished during the week. This period was for 27 days. The gain on the 11 shots was 319 pounds. The cost of the gains was \$31.27, or about \$9.80 per cwt. They were fed ground wheat at \$2.95 per cwt.

The regular monthly testing of the dairy herds was attended to during the week. There are 7 herds keeping records every month.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Minidoka.

During the week ending August 25, 2 calls from outside points and two from the Project were received for information regarding the possibility of securing stock hogs to clean up the waste in the grain fields. However, there are no hogs to be had.

A few fields of potatoes were contracted during the week at 75 cents per cwt., the sacks to be furnished by the buyers. The buying was done by speculators.

The dry farm grain adjoining the Project is now being threshed. In most of the districts the yield is ranging from 4 to 6 bushels while in a few districts, more favorably located, the yield is ranging from 5 to 10 bushels.

There are but few wether lambs for sale as these are being held for exchange for ewe lambs. Those that are sold are going at from 8 to 12 cents. Fifteen cents is being offered for market hogs. Butter-fat is 46 cents (1 cent reduction for each pound of cream) at the cream receiving stations and 44 and 45 cents at the cheese factories. Hay is still held at \$15, with none selling.

Huntley.

Twenty farm visits were made during the week ending August 25. Two farmers are erecting silos on their farms, and they are receiving all the assistance possible from this office. Much of the week was spent in collecting property of this office and getting things in shape to turn over to Mr. Hansen.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Yuma.

During the week ending September 1 the maximum temperature was 109, minimum 61 and greatest daily range 47.

Thirty-one acres were irrigated.

Most of the labor performed for the entire week was cultivation and hoeing. Alfalfa hay was harvested from borders B1 to 5, B11 to 17, C1 to 5, D1 to 5 and E3 and 4. Sudan grass was harvested from C26 for hay and from D10 for seed.

The top set of Egyptian cotton continues in an encouraging way. Even overgrown fields have much better prospects of fair yields than was apparent a few weeks ago.

Early plantings of Dwarf milo and Feterita are being harvested and the head grain when dried is selling for 2-1/2 cents per pound.

Yuma county in Arizona has recently employed a county farm adviser, who took up his duties September 1.

San Antonio.

During the week ending September 1 the maximum temperature was 100, minimum 66, and greatest daily range 32. There has been no relief from drought, but the weather has been somewhat cooler. Cotton is opening rapidly, much of it before the bolls have reached normal maturity. Cotton picking is general throughout the section. While the plants are small, the cotton is yielding reasonably well, some making a third of a bale per acre.

Sorghum and Sudan grass in the rotation experiments were cut, raked and shocked. Cotton in the time-of-planting experiment on field C6 was picked. Soil samples were taken on sorghum plats in the rotation experiments and the taking of soil samples on the cotton plats was started.

Scottsbluff.

During the week ending September 1 the maximum temperature was 92, minimum 41 and precipitation for the month of August was .42 inch.

Most of the small grain on the Project has been harvested. The yield in most cases is very good. The hay crop is rather light. This is due both to the short season and damage done by grasshoppers. Grasshoppers have done and are still doing considerable damage over practically the entire valley. A great many of the farmers have reduced the grasshopper damage by poisoning and catching them. Poisoning has not been entirely satisfactory in many cases. This

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Field Notes.

Scottsbluff, (continued)

was perhaps due to the fact that poison was not used until the grasshoppers had almost reached full size. The grasshopper catcher was also more effective before the grasshoppers developed wings.

If the frost holds off two weeks the beets, corn and potato yields will be good.

At the station the threshing is almost completed. The grain was dry and threshed out in very good condition. The average yield per acre from two-tenth acre plats was as follows:

Barley Varieties.

<u>Variety</u>	<u>Avg. per acre, bushels</u>
Idaho.....	79.3
Barbary.....	63.2
Franconian.....	56.2
Svanhals.....	60.4
Hooded.....	46.5
Bald.....	46.2

Oat Varieties.

New Market.....	76.4
Swedish Select.....	70.0
Canadian.....	69.9
Big Four.....	68.3
White Kherson.....	64.4

Wheat Varieties.

Arnautka.....	52.4
Beloturka.....	51.9
Ghirka.....	51.7
Defiance.....	50.4
Galgalos.....	49.9

In the cultural test with oats and barley on plowed corn land, disked corn land and spring toothed corn land yields were as follows:

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Field Notes.

Scottsbluff (continued).

Crop and cultural method.	Yield per acre
<u>Oats:</u> (Average of three 1/10 acre plats).	
Plowed.....	83.1
Disked.....	84.4
Spring-toothed.....	85.9
<u>Barley:</u> (Average of four 1/10 acre plats).	
Plowed.....	60.9
Disked.....	58.3
Spring-toothed.....	51.9

Yields of oats, wheat, and flax, field K, Scottsbluff Experiment Farm, 1917.

Rotation number	Oats.	Yields.	
		per plat	per acre
		<u>Pounds</u>	<u>Bushels</u>
1	483	60.4
27	775	96.9
65	700	87.5
23	628	78.5
25	602	75.3
31	704	88.0
61	607	75.9
30	523	65.4
60	589	73.6
42	636	79.5
22	600	75.0
16	476	59.5
32	486	60.7
62	521	65.1
44	549	68.3
24	522	65.3
48	486	60.7
28	421	52.6

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Field Notes.

Scottsbluff (continued).

Yields of oats, wheat, and flax, Field K, Scottsbluff Experiment Farm, 1917 (continued).

Rotation number		Yields.	
		per plat	per acre
		<u>Pounds</u>	<u>Bushels</u>
	<u>Wheat</u>		
18	585	39.0
5	425	28.3
7	396	26.4
48	603	40.2
28	356	23.7
3	383	25.5
	<u>Flax</u>		
9	45	3.2
65	175	13.6

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Shoshone.

During the week ending September 1, 30 farm visits were made, 9 office calls were received, 4 other conferences were held and 2 milk samples were tested.

E. F. Burton, state dairyman, spent one day on the project visiting farmers regarding shipping in of dairy cattle from Wisconsin. He suggests that farmers who have a surplus of skim milk buy six weeks old calves and express them, since these calves can be bought for veal prices due to the high prices of milk and feed. It seems probable that a few calves will be ordered by farmers here.

On three of the farms cattle showed evidence of having been poisoned by loco. They had been eating in the hay weeds which the supervisor of the forest reserve range pronounced as probably being loco.

Truckee-Carson.

During the week ending September 1, there were received 42 calls for assistance, and 9 farmers were visited in response to calls.

On August 25, there was an outbreak of anthrax in the herd of C. H. Handcock. One animal died very suddenly on that day with evidence of the disease. A careful post mortem was held, and the animal later destroyed by burning. During the next few days two animals had temperatures of 106 and 107 degrees respectively. On the morning of September 1, another animal was found dead with evidence of having died of anthrax. As soon as it was learned that a second animal had died, the State Disease Control Board was communicated with, and before night of the same day the herd of 38 animals were immunized by the double treatment. Vaccination for this herd was delayed on account of the absence of the owner, who was away on a visit.

The only silo that will be filled on the project this year is being filled at the present time with Russian thistle. The thistle is cut loose from the ground with a sharp shovel and loaded into wagons. Most of the thistle is being cut just before the briars get hard. One of the farmers belonging to the local creamery has a very luxuriant growth of thistle this year, and it is from this farm that the thistle is being gathered. Three or four tons of Russian thistle silage was put into the same silo last year by the local creamery and they report that it was very readily eaten by the cattle. The ordinary ensilage cutters are not adapted to

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Field Notes.

Truckee-Carson, (continued).

cutting the very bushy bunches of thistle and for this reason the cutting process is rather slow.

Beginning with the first of August, there has been considerable competition in the purchasing of cream on the project. The Nevada Packing Company has established a creamery at Reno in connection with their packing plant, and is competing on the project for butter-fat. Their quotation for past week was 48¢ f.o.b. Reno for first grade cream, and 2¢ less per pound for No. 2. This is considered a higher price than the Crescent Creamery Company of Reno or the local creamery were offering. Until recently, the local creamery has been paying 1¢ above San Francisco quotations for butter. Because of this rather low price, it has been an easy matter for competition to get a foothold here. The tendency at present is for the local prices to be increased. The competition, as a whole, has been beneficial to the farmers so far.

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WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Truckee-Carson.

The pigs in the pasture experiments have not made satisfactory gains this year. The total gains of those pastured on sweet clover has been only slightly greater than of those pastured on alfalfa, the former requiring 2.82 pounds of grain per pound gain, and the latter 3.03 pounds to each pound gain. The Berkshires have not made as satisfactory gains as the grade Durocs. The details are shown in the accompanying table.

Items of Comparison.	Pasture		Pasture, June 30 to Sept. 8.					
	August 17 to September 8.		Sweet clover			Alfalfa.		
	Sweet clover	Alfalfa	Blacks	Reds	Blacks and Reds	Blacks	Reds	Blacks and Reds
Number of pigs.....pounds	9	8	4	5	9	3	5	8
Initial weight.....do	751	733	260	267	527	221	316	537
Final weight.....do	852	843	404	448	852	323	518	841
Gain in weight.....do	101	110	144	181	325	102	202	304
Daily gain.....per cent	.61	.67	.64	.75	.70	.55	.71	.65
Barley fed.....pounds	245	245	323	363	686	269	421	690
Tankage fed.....do	81	81	108	121	229	90	140	230
Grain per pound gain...do	3.18	2.92	3.00	2.67	2.82	3.52	2.77	3.03

Barley Variety Test.

The variation in the soil was so great that an idea of the relative values of the varieties can be obtained only by comparing the yields of the two nearest check plats, giving the greatest weight to the yield of the nearest check plat. The mean yield of all the checks cannot be taken into consideration.

Among the barley varieties, it appears that only Beldi outyields the variety purchased in a local store, and which is commonly grown in this section. The varieties Hannchen and Coast are equal to the "Local". The yield of the Hulless was 50 per cent less than the "Local."

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WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Truckee-Carson (continued).

Variety.	Area	Yield	Yield per acre	Estimated probable yield of "Local"	Variety yields compared with estimated yields of "Locals".	
					Pounds	Per cent
"Local".....	.31	251	810	...	...	...
Beldi.....	.29	329	1135	952	183	119
Hulless.....	.29	151	521	1093	-572	48
"Local".....	.30	371	1235	....	...	...
Chevalier.....	.30	285	950	1182	-232	80
Hannchen.....	.30	345	1150	1128	22	102
Svanhals.....	.30	253	843	1075	-232	79
Coast.....	.31	244	788	1021	-233	77
"Local".....	.33	319	968	....	...	...
Hulless.....	.33	165	500	967	-467	52
Chevalier.....	.33	236	716	966	-250	74
Hannchen.....	.33	307	930	966	- 36	96
"Local".....	.42	405	965	...	...	...
Svanhals.....	.33	277	840	1000	-160	84
Coast.....	.33	386	1170	1032	138	113
"Local".....	.17	182	1070	....	...	...

Variety Test of Barley.

Variety.	Yield per acre.			Estimated yield of local variety.			Increase or decrease from estimated yield of "Local"
	East	West	Average	East	West	Average	Per cent.
	series	series		series	series		
	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	
Beldi.....	1135	....	1135	952	....	952	119
Hulless.....	521	500	510	1093	967	1030	50
Chevalier...	950	716	833	1182	966	1074	77
Hannchen....	1150	930	1040	1128	966	1047	99
Svanhals....	843	840	842	1075	1000	1038	81
Coast.....	788	1170	979	1021	1032	1027	96

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Truckee-Carson (continued).

Wheat Variety Test.

The relative merits of the different varieties of wheat were calculated in the same manner as the barley varieties. The total average yield of the varieties cannot be taken as a measure of their comparative worth. If this were done, Dicklow would appear to be best, and Little Club the poorest. When the varieties are compared with the yields of the nearest check plats, decidedly different conclusions are drawn. The last column of the following table 2 shows that Little Club yielded 6 per cent more than the nearest check plats, while Ghirka is the poorest of all varieties.

According to this method of calculation, Little Club, Marquis and Sonora are the highest yielding varieties; Bluestem, Dicklow and Rieti, about equal to the "Local", and Defiance and Ghirka are poorest.

Table 1.

Variety.	Area	Yield	Yield per acre	Estimated probable yield of "Local"
	<u>Acres</u>	<u>Pounds</u>	<u>Lbs.</u>	<u>Pounds</u>
Local.....	.31	794	2560	2560
Little Club.....	.31	946	3050	2657
Rieti.....	.31	841	2713	2754
Bluestem.....	.31	860	2773	2851
Local.....	.31	914	2948	2948
Defiance.....	.31	807	2607	2821
Marquis.....	.31	797	2570	2695
Local.....	.31	796	2568	2568
Local.....	.35	1088	3110	3110
Sonora.....	.35	1163	3323	3108
Dicklow.....	.35	1001	2860	3105
Ghirka.....	.35	813	2323	3102
Local.....	.40	1241	3100	3100
Local.....	.28	95	340	340
Little Club.....	.28	112	400	602
Rieti.....	.28	236	843	863
Local.....	.28	315	1125	1125
Bluestem.....	.28	430	1536	1389
Defiance.....	.28	522	1864	1654
Local.....	.28	537	1918	1918
Marquis.....	.28	768	2743	2331
Sonora.....	.28	784	2800	2741
Local.....	.28	883	3153	3153
Dicklow.....	.28	916	3271	2894
Ghirka.....	.28	778	2780	2634
Local.....	.28	665	2375	2375

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Field Notes.

Truckee-Carson (continued).

Table 2.

Variety.	Yield per acre.			Average yield per acre	Estimated yields of local variety on same plats.				Increase of decrease from estimated yield of "Local". Per cent
	South	North	Total		South	North	Total	Average	
	series	series			series	series			
	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	
Little Club...	3050	400	3450	1725	2657	602	3259	1630	106
Rieti.....	2713	843	3556	1778	2754	863	3617	1809	98
Bluestem.....	2773	1536	4309	2160	2851	1389	4240	2120	102
Defiance.....	2605	1864	4469	2240	2821	1654	4475	2338	96
Marquis.....	2570	2743	5313	2657	2695	2331	5026	2513	105
Sonora.....	3323	2800	6123	3062	3108	2741	5849	2930	105
Dicklow.....	2860	3271	6131	3066	3105	2894	5999	3000	102
Ghirka.....	2323	2780	5103	2552	3102	2634	5736	2868	89

During the three weeks ending September 8, the maximum temperature was 99, minimum 42 and precipitation .42 inch.

San Antonio.

During the week ending September 8, the maximum temperature was 97, minimum 72 and greatest daily range 24. The total precipitation was .04 inch, which all came in light showers, and was insufficient to be of value to crops.

The principal field work done was cotton picking. The first picking of all rotation plats was made. While the yields were low, they were better than expected under the extremely unfavorable conditions prevailing during the season. The average yield from all plats in the rotation experiments was at the rate of 380 pounds of seed cotton per acre. The plants were very small on most plats, but the thick stand and consequent large number of plants per acre, compensated for the small number of bolls on each plant. Soil samples were taken on the cotton plats in the rotation experiments. Some weeding was done in the orchards and in miscellaneous fields.

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WESTERN IRRIGATION AGRICULTURE
Field Notes.

San Antonio (continued).

During the week ending September 15, the maximum temperature was 98, minimum 61 and greatest daily range .03 inch.

The principal field work done was picking cotton and weeding. Picking of cotton in the thinning experiments and miscellaneous experiments was accomplished. Weeding was done in the rotation experiments and on fields D3, C5 and C6. A part of the Sudan grass and sorghum hay from the rotation experiments was hauled in.

Belle Fourche.

During the week ending September 8, the maximum temperature was 88, minimum 39 and precipitation T.

Some of the alfalfa in field P was mowed, raked and hauled in. Alfalfa in P and I; beets in O and the irrigated rotations were irrigated.

Some harvesting was done on the dry land; oats in field P were threshed and part of the flax and wheat on the irrigated rotations were threshed. Yields of flax and wheat are as follows:

	<u>Maximum</u>	<u>Minimum</u>	<u>Average</u>
Flax.....	17.6	6.9	14.7 bushels.
Wheat.....	36.9	15.6	27.5 do

On September 4, 12 lambs, total weight 860 pounds, were turned on the corn in rotation 71.

A four-horse team has been busy most of the week plowing on the dry land. Manure washauled and spread in field P, oat stubble. Part of the forestry was hoed and berries in the garden were manured.

Part of the men were busy hauling water and grain, caring for stock and cleaning up.

Mr. Leighty of the Cereal Office visited the station Saturday.

During the week ending September 15, the maximum temperature was 81, minimum 43 and precipitation O.

All threshing in the rotations, except alfalfa, was completed. Oats, in the new 80, were threshed and some threshing was done in field O.

A four-horse team was busy during the week plowing in field A. Straw was hauled and spread on the return straw plats in A, and two plats of winter wheat were seeded.

Manure was hauled and spread on field P, oat stubble. Potatoes in O were hoed and roads and alleys on the dry land was hoed.

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WESTERN IRRIGATION AGRICULTURE.
Field Notes.

NOTICE.

Appointments.

Requests for appointment of aliens.

Hereafter when making requests for the appointment of persons not citizens of the United States, farm superintendents should indicate what country the person recommended is a citizen of and state what steps, if any, he has taken toward naturalization.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Tieton.

Twenty-seven farm visits were made during the week ending August 18, 13 calls for assistance were answered and nine office conferences were held. In addition, one directors meeting was attended at the Harwood cheese factory and 34 samples of milk were tested for factory patrons.

The interest in building and filling silos is becoming very active. Two new silage cutting outfits have been delivered to Tieton farmers at this date. Nine new silos have been constructed and several others will undoubtedly be built. This office has also received a number of requests for assistance in silo building from farmers off the project. These have been handled by office conferences, the use of silo bulletins, and by reference to the county agriculturist and the state college.

Mr. Swanson now holds the record for losing cows by impaction, having lost 6 in 36 hours. His feeding program has been rather undesirable and there has been some carelessness in feeding only corn silage or only alfalfa hay during different periods. During the last two weeks the cows have had an almost unlimited supply of newly cut but well-cured very coarse alfalfa. The impaction has reached a critical stage unnoticed and all efforts to relieve the cows were unsuccessful. Post mortem examinations supported diagnosis of the trouble when assistance was first called for.

Twenty-nine farm visits were made during the week ending September 8, 11 calls were answered by farm visits and 8 conferences were held. One day was spent with Mr. Everett, U. S. Dairy Division, Mr. Jamison, Dairy Field Agent, and Mr. Fluharty, County Agriculturist, in visiting the Harwood cheese factory and meeting with the directors of the Sunnyside Cooperative Creamery at Sunnyside.

Silo filling is just beginning in the lower valleys. This has been an excellent corn year on farms which have had sufficient water, as the hot, dry weather was ideal for corn growing. The corn ear worms, which have caused quite extensive damage in previous years, seem to be practically absent this season. Some farmers credit the increasing numbers of blackbirds with extermination of the worm.

Local creameries are paying 49 cents for butter-fat during the latter part of the week and predict a raise next week. A number of farmers in the Ahtanum valley are selling whole milk at a 10 cents per pound butter-fat advance over the creamery price, others are receiving the same advanced price for sweet cream. The local hog buyers are offering \$15.75 for prime hogs.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Truckee-Carson.

For the week ending September 8, there were received 28 calls for assistance, 13 of which consisted of visits to office. Eleven visits were made to farmers in response to requests.

Two cases of sick pigs were investigated and found to be digestive disorders. The blackhead disease among the turkeys has continued to spread over the valley.

For the past week the nights have been cool and there is some danger of a frost. The minimum has been 42. The ranchers of this locality report that up to date this has been the best growing season for several years. Practically all crops, with the exception of a few varieties of tender fruits, have yielded abundantly. Corn has made a better growth this year than usual. There is considerable hay being marketed at the present time, the prevailing price being \$16 f.o.b. Fallon. Large quantities of hay have been contracted by feeders at \$12 per ton in the stack.

Mr. Bain, of the Dairy Division, visited the project on Thursday for the purpose of seeing whether or not it will be advisable to place a man here for the purpose of determining the cost of production of dairy products.

Shoshone.

During the week ending September 8, 17 farm visits were made, 11 office calls were received, and 2 other conferences were held.

The Boys' and Girls' Club exhibit was held this week and the winners sent their exhibits to the State Fair. Four members of the Boys' Pig Club exhibited their pigs. One boy reported a profit of \$11.00 on his pig during the 16 weeks feeding period.

Some of the farmers who have test plots of Northwestern Dent corn, the seed for which was furnished by the Huntley Experiment Farm, are well pleased with it. It will hardly mature before frost but it will mature enough to make excellent silage. One man is pleased with the results of feeding it green to hogs. One man who has saved seed corn for 2 years from his own field, has corn which is maturing earlier than the Northwestern Dent planted in the same field. I am suggesting to the farmers that they save seed from this corn rather than look for seed off the project.

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FIELD NOTES.

Huntley.

During the week ending September 15, the maximum temperature was 89, minimum 35 and precipitation .72 inch. On Thursday we had the first rain of any consequence since June 4, when .4 inch fell.

Oat, wheat and flax plats in the irrigated rotations in Fields K and L-IV have been harvested and the yields for each rotation are given in the following tables:

Table 1.- Oat yields, Field K, 1917.

Rotation No.	Plat No.	Pounds per plat		Bushels per acre grain	Stand per acre.	Ratio Grain to straw (pounds)	Weight per Bu., Lbs.
		Grain	Straw				
1cc	K-V-21	326	274	40.8	645000	1 : 0.845	34
16	- 1	446	436	55.8	774000	1 : 0.978	33
22	-8	652	608	81.5	754000	1 : 0.932	32
23	-16	564	568	70.5	697000	1 : 1.007	35
24	- 9	548	450	68.5	883000	1 : 0.821	34
25	IV- 6	678	658	84.8	860000	1 : 0.971	36
27	V-20	369	519	46.1	701000	1 : 1.406	32
28	-17	277	369	34.6	858000	1 : 1.333	34
30	IV-17	367	347	45.9	838000	1 : 0.944	34
31	III-15	400	378	50.0	846000	1 : 0.948	35
32	IV-20	404	410	50.5	791000	1 : 1.015	34
42	- 8	715	750	89.4	867000	1 : 1.048	36
44	-13	493	703	61.6	736000	1 : 1.425	35
60	III-12	694	705	86.8	854000	1 : 1.015	36
61	-6	885	889	110.6	902000	1 : 1.005	39
Average	1917	521	538	65.2	800400	1 : 1.046	34.6
"	1916	625	528	78.2	625733	1 : 0.838	36.0
"	1915	634	861	79.3	513400	1 : 1.365	33.2
"	1914	...	...	89.8	794066	1 : 1.061	....
"	1913	...	...	84.2	685133	1 : 1.091	....
"	1912	...	...	48.7	.....	1 : 1.074	....

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Huntley (continued.)

Table 2.- Oat yields, Field L-IV, 1917.

Rot. No.	Plat No.	Pounds per plat		Bushels per acre Grain.	Stand per acre.	Ratio Grain to straw (Pounds).	Weight per Bu., Lbs.
		Grain	Straw				
1a	L-IV-1	614	614	76.8	720000	1 : 1.000	32
34	-3	935	947	116.9	709000	1 : 1.015	34
35	-7	818	894	102.3	1026000	1 : 1.092	33
46	-11	854	880	106.8	890000	1 : 1.020	35
64	-16	765	797	95.6	321000	1 : 1.041	38
69	-23	797	841	99.6	758000	1 : 1.059	35
Avg.	1917	830	829	99.7	819833	1 : 1.038	34.5
"	1916	445.	366	55.7	738833	1 : 0.820	32.7
"							

Table 3.- Wheat yields, Field K, 1917.

Rotation No.	Plat No.	Pounds per plat		Bushels per acre, grain	Stand per acre	Grain to Straw (Pounds)
		Grain	Straw			
3	K-V- 23	249	349	16.6	1141000	1 : 1.402
5	II- 7	443	567	29.5	735000	1 : 1.279
7	- 8	437	543	29.1	761000	1 : 1.243
18	V- 4	536	694	35.7	614000	1 : 1.294
28	- 18	321	313	21.4	701000	1 : 0.975
Average....	1917	397	493	26.5	790400	1 : 1.239
"	1916	397	442	26.5	564800	1 : 1.099
"	1915	512	727	34.1	358200	1 : 1.387
"	1914	...	...	32.7	567200	1 : 1.356

Table 4.- Flax yields, Field K, 1917.

Rotation No.	Plat No.	Pounds per plat		Bushels per acre, grain	Stand per acre	Ratio Grain to Straw (Pounds).
		Grain	Straw			
9	K-II-16	107	266	7.6	1714000	1 : 2.463
67	II- 6	424	636	30.3	1023000	1 : 1.500
Average	1917	...	...	18.9	1368500	1 : 1.981
"	1916	17.7	1586000	1 : 1.626
"	1915	21.3	1164000	1 : 1.679
"	1914	18.6	1788500	1 : 2.155
"	1913	21.7	1515500	
"	1912	14.7	

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Field Notes.

Huntley (continued).

Alfalfa was seeded in the oat stubble in rotations 44, 46, 64 and 69, and rye in rotation 27 on September 5.

The gains made by spring pigs on alfalfa pasture and 2 per cent corn are given in tables 5 and 6.

Table 5.- Spring pigs on alfalfa pasture and 2 per cent corn,
Field K, Rotation No. 67.

Hog No.	No. days	Initial weight	Final Weight	Gain, pounds	Avg.daily gain.	Corn fed, pounds	Pounds grain per pound gain.
22	28	44	56	12	.43	.....	.....
52	28	39	53	14	.50	.....	.....
110	28	49	61	12	.43	.....	.....
117	28	61	75	14	.50	.....	.....
119	28	44	58	14	.50	.....	.....
130	28	46	57	11	.39	.....	.....
136	28	51	64	13	.46	.....	.....
141	28	31	39	8	.29	.....	.....
Total		365	463	98	3.50	238	2.43
Avg.		46	58	12	.44		

Table 6.- Spring pigs on alfalfa pasture and 2 per cent corn,
Field L-IV, Rotation No. 69.

Hog No.	No. days	Initial weight, pounds	Final weight, pounds	Gain, pounds	Average daily gain, Lbs.	Corn fed, pounds	Pounds grain per pound gain.
20	28	49	60	11	.39	....	....
55	28	41	58	17	.61	....	....
102	28	37	53	16	.57	....	....
115	28	63	76	13	.46	....	....
125	28	37	48	11	.39	....	....
143	28	36	53	17	.61	....	....
153	28	61	82	21	.75	....	....
172	28	40	55	15	.54	....	....
Total		364	485	121	4.32	231	1.91
Avg.		45	61	15	.54	....	....

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Tieton.

During the week ending August 25, 38 farm visits were made, 11 calls were answered by farm visits and 11 office conferences were held. Four bills of material for silo were figured for three farmers and types and costs were discussed with another.

Mr. Bain, of the Office of U. S. Dairy Division, in charge of Cost of Milk Production Associations, spent three days in the valley looking into the possibility of securing 20 or 22 representative herds of about 20 cows each for an association. Eleven herds were definitely secured for the proposed association and it was evident that there would have been no great difficulty in making a satisfactory association. It was planned to include at least four and possibly five herds. Inasmuch as one association is organized at Mt. Vernon, Washington, the Dairy Division advised Mr. Bain that it seemed inadvisable to establish two associations of this character in one state.

There is very little alfalfa hay selling at this time, although it is estimated that 50 per cent of the first and second cuttings in the valley have been sold or contracted. The quoted buying price is \$20 per ton baled. Buyers appear to be waiting for the third cutting before making further attempts to move the crop and it is generally believed that the price is at the highest point that hay will reach from this time on.

During the week ending September 1, 8 farm visits were made, 3 calls were answered by farm visits and 7 office conferences were held. Three days of the week was spent in the Tieton River Basin, that portion of the Ranier National Forest in which the Cowichee Cattle Company's herd is pastured. The one day spent in the office was given principally to checking over the individual milk and feed records which have been completed or discontinued.

Reports had come from the Tieton Basin that there was an unusual loss of cattle, due probably to blackleg. Investigation disclosed a probable loss of 11 head out of a herd of 1658. Of this number 5 or 6 undoubtedly died of blackleg, the deaths occurring at about the same time and on one portion of the range. Other losses were by poisoning and predatory animals according to evidence of the herder. The number lost to date is no greater than the average annual loss. So far as is known no animals have been lost by theft or accidental or intentional shooting, as has often been the case in previous years.

The Tieton range has suffered to a great extent by the hot and dry season except in the well watered meadows and the higher sections. The flies and mosquitoes have bothered the cattle to considerable extent, keeping them moving and in the brush to such an extent that the customary satisfactory gains have not been made this summer.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton (continued).

There is a marked difference between the present condition of the herds, which were well wintered in 1916-1917, and those which were simply fed to "get them through". The well wintered animals are coming off the range in fair condition while the lots that went into the hills in poor condition after a winter of "rustling" or of scanty feeding will require considerable more fall feeding before they are in good marketable condition.

The forest fires, which have been burning in the Cascades, have not touched the Tieton range although small fires are reported at short distances. There is but little snow on the Summit and sheep are beginning to graze there now, the most of them having been kept in the lower valleys and benches in the earlier season.

The improvement in the condition of the grasses was particularly noticeable in the Cowlitz Pass on the west slope of the Cascades where within a few miles travel grasses, flowers and small shrubbery had a green and flourishing appearance much different from that on the east side of the Summit.

During the week ending September 15, 22 farms were visited, 11 calls for assistance were answered by farm visits, and 3 office conferences were held. In addition, sheep were judged at the Nob Hill Community Fair for the Boys' Lamb Club of that community, in preparation for the State Fair. Also a stockholders' meeting was attended at the Harwood cheese factory.

The cheese factory stockholders meeting was held for the purpose of acquainting the patrons with some of the problems as well as with the operation of the factory and to sustain their interest in the factory as a cooperative enterprise. Messrs. Fish and Carmen, of the State Dairy Department, spoke of cheese factory operation and the solution of local problems. Mr. Alexander, the president of the association, described the factory's operation and affairs. A lunch of cheese, crackers and coffee was served. It is planned to hold a similar meeting in the future to insure the retention of cooperative interest and to cement the sense of joint responsibility.

One day was spent with Mr. Spring, secretary of the cheese factory association, in visiting grocery stores on the Sunnyside project in an attempt to secure a local market for cheese. At this time newly organized cheese factories operating on a small amount of milk are meeting with severe competition from creameries. It was thought possible to secure and give satisfactory service to a "direct to the grocery" trade and thus advance the selling price of cheese by at least 2 cents per pound, at the same time offering the grocers cheese less wholesalers' commission and freight from coast points. The trip was very satisfactory, Mr. Spring securing orders for over a ton of cheese at an advance of two cents over the price obtainable from cheese brokers or wholesalers. A sample of

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Field Notes.

Tieton (continued).

cheese was carried to each store and the and the quality of possible orders was guaranteed to be equal to the sample or returnable. It is planned to ship any inferior cheese to an out-of-town cheese broker.

Assistance was given Mr. Jamison, dairy field agent, in planning and securing a demonstration of the value of pure bred bulls over grade bulls. Three tested daughters of a pure bred bull and three of a grade bull were secured from cow testing association members, together with the grade bull. The pure bred bull had been sold for beef. The average production of the "sired by pure bred bull" cows was 304 pounds of butter-fat in 12 months and that of the "sired by grade bull" cows was 210 pounds in 12 months. Each bull had been used in a 20 cow herd for two years.

Boise.

Considerable time was spent during the week ending August 25 on the proposed cooperative shipment of lambs, with the result that the plan has been found impracticable for the present year, on account of the strong demand for any kind of sheep. There are a few wether lambs to be sold but they are too widely scattered to be assembled for shipment and are not sufficient in number to make a shipment worth while.

Blackleg vaccination has been done in two communities this week, in both of which losses from the disease have occurred. Near Wilder, Mr. Peckman lost a fine pure bred Hereford calf. In the other district the work was done with County Agent Musser through the local Farm Bureau committee, members of which accompanied.

Although the season is well advanced toward the time when frost is to be expected, during the week ending September 8, many men were still planning to build silos. Everything that seemed reasonable has been done for several years to induce those who expect to put up silos, to build early but most men prefer to wait until they are sure of a silage crop. A unprecedented number of silos are being built this year because of the shortage and high price of hay. The greater part of these are in the upper part of the Boise Valley where the alfalfa was injured last winter much worse than in the lower Valley. The majority of silos built are monolithic concrete, others are wooden-hoop, double pit, commercial stave, one of glazed clay tile will probably be built - the first of the kind in the valley.

Several new concrete silo forms have been built during the season but there is still need for more, several men who preferred concrete structures having built other kinds because they were unable to secure forms. Most of the forms in use are 3 feet steel forms which are

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Field Notes.

Boise (continued).

somewhat objectionable because of the time required to build a silo with them. Some 5 feet wooden forms have been tried but have not been satisfactory. Last year a 12 x 30 feet wooden form was built so that the silo could be completely built to the height of 30 feet without moving the form. This has proved quite practicable, 30 feet silos having been built with it in three and one-half to four days. The form is expensive, however, and may not prove durable.

The directors and a few of the members of the Boise Valley Cattle Grazing Association met at Meridian on Monday of the week ending September 15, to hear a report from the herder, who was present. The herder reported that there had been no rain on the reserve since early in the summer and that, in consequence, the range is very short and cattle are beginning to shrink. All the smaller are dry and stock must come to the large streams for water which makes difficult grazing of the higher hills, where there is still a little feed. The herder strongly recommended that the cattle be brought down not later than October 1, but stock owners present stated that it would be almost impossible to take care of them on the farms at that time. It was thought that a rain might make it possible to hold the stock in the hills for a while longer without serious losses.

Some rain fell in the Valley the following night and again on Thursday but no report from the range has been received.

The "Mini-cassia" fair at Burley, on the Minidoka Project was attended Thursday and Friday. Livestock exhibits reflect Mr. Rinehart's work and judgment in the selection and purchase of breeding stock for the farmers. The exhibit as a whole was not high class, but in nearly all rings there were some very creditable entries, for most of which Mr. Rinehart was more or less responsible. Sheep were made the strongest exhibit from the standpoint of quality. Hampshires and Lincolns were the only breeds represented but entries were uniformly good.

Mr. Rinehart had requested the Caldwell office of Demonstrations on Reclamation Projects a year ago to supply a judge in the live stock classes for the 1917 Burley fair and made the work more than usually interesting by requiring that a sweepstakes entry over all ages and breeds be selected in each class. It was demonstrated that this can be done. It was suggested to Mr. Rinehart and other members of the Board of Managers that a grand sweepstakes entry over all ages, breeds and classes might have been awarded. The suggestion is to be considered next year.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Uncompahgre.

One day of the week ending September 1 was spent at Grand Junction, Colorado, in visiting the farm of Lazear one of the pure bred Stock breeders on the Western Slope.

The remainder of the week was spent at the ram sale at Salt Lake City, Utah.

One day of the week ending September 15 was spent in conference with Mr. Dorman at Salt Lake City regarding the supply of dairy cattle in the west, and also with the Bureau of Animal Industry at Salt Lake City regarding obtaining blackleg vaccine for farmers.

Returned to the project on Friday, where the time has been spent at office work and assisting with the live stock sale at the Fair and in the general stock exhibits.

Considerable interest has been aroused regarding the sale this year. There will be ample supply to handle for the first sale. There will be more cattle and horses shown than in former years.

Many potatoes are being dug at the present time. The yields are exceptional in many cases. One field of early potatoes yielded over 200 sacks and sold on the local market for \$1.85 per cwt.

The fall shipment of cattle and sheep are now in progress. Some of the local men are contemplating the purchase of one or two carloads of dairy cows from Idaho.

North Platte.

A greater part of the week ending September 8 was spent at the State Fair at Lincoln, and enroute to and from the fair. The live stock exhibits in all departments were good. Among the dairy cattle there was more competition among the Holstein than with any other breed. Five herds of Jerseys were represented, one herd of Ayrshires, and no Guernseys. As a whole, the number of dairy cattle shown was less than in former years.

The swine show was strong as usual. All of the more important breeds were well represented, the Duroc-Jerseys and Poland Chinas leading in number. However, there was a large exhibit of Hampshires, more than ever before in the history of the Fair. With the Durocs it was noticeable that a great many of the prizes were won by new exhibitors who had not been showing at the state fair in former years. The grand champion of the Iowa state fair last week, failed to win a similar place at the Nebraska fair, though winning first place in his class.

On Friday one small bunch of 19 shotes was vaccinated with the double treatment in the vicinity of Bayard. The remainder of the day was spent visiting farmers in that locality.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

North Platte.

The Scottsbluff county fair was held at Mitchell during the week ending September 15, and most of the week was spent attending the fair, assisting in the live stock exhibits. The fair was a success in every way. The exhibits were better than ever before, notwithstanding the fact that farmers were very busy with fall farm work. The attendance was considerably larger than in former years. Thirty-five pens of hogs were exhibited consisting of about equal number of Polands and Durocs. One Hampshire was shown. The quality of the swine exhibited was good.

Dairy cattle from six farms were exhibited. Four herds of Holsteins represented and two herds of Jerseys. Four herds of beef cattle were shown, three of them being especially good herds. The horse exhibits filled the horse barns, and a large number of horses and mules were shown. Five farmers exhibited sheep. In every live stock department there were a number of new exhibitors, who had not been showing stock in former years. Some of the live stock shown was brought approximately 30 miles. Two herds of hogs were brought this distance, two herds of beef cattle and some horses.

Up to this time the live stock classes as outlined in the fair catalogue have not been as complete as they might be, and this year did not meet with the entire approval of the exhibitors. This office has been asked to draw up a complete list of classes for live stock and submit it to the fair directors for insertion in the 1918 catalogue.

Assistance was given a number of farmers in the selection of breeding stock at the county fair. Five herds, representing a total of 321 hogs were vaccinated during the week. One outbreak of cholera was found in a herd of 30 hogs. This herd was among those vaccinated. The other herds vaccinated were well herds, and were given the double treatment. One bunch of 11 shoters was treated for scirrhus cords during the week, and one small bunch was treated for sore mouth.

Open weather still prevails. Thus far crops have not been injured by frost. The corn crop on the project looks especially promising.

Butter-fat is selling for 48 cents. Corn at \$3.50 cwt. Beet tops at about \$10 per acre. Alfalfa hay is selling about \$18 in the stack. A few feeder lambs were shipped in during the week. At the present time feeder lambs are costing the farmers about \$16.25 per cwt. laid down in the valley. It is estimated that the lamb feeding industry in the valley will not be over 50 per cent as large as last year.

WESTERN IRRIGATION AGRICULTURE

FIELD NOTES.

San Antonio.

During the week ending September 22, the maximum temperature was 93, minimum 65, and greatest daily range 27. The first rain of consequence since the latter part of July came on Wednesday and Thursday. The total precipitation was 1.66 inches. The rain will be of much benefit to late feed crops and to pastures.

Before the rain miscellaneous field work was done. The rain prevented field work during the greater part of the week. By Saturday afternoon, some fields were sufficiently dry for harrowing, and the harrows were started. Labor was utilized during the wet weather at odd jobs about the buildings and in cutting brush along the fences.

Belle Fourche.

During the week ending September 22, the maximum temperature was 87, minimum 38 and precipitation .35 inch.

The corn in the silage test in field O was harvested and the green weight from each plat taken.

The remainder of the time the men were employed in hauling manure, plowing and cleaning up.

During the week ending September 29, the maximum temperature was 88, minimum 34 and precipitation 0.

The alfalfa in fields I, A, and P, was mowed, raked and shocked. The corn in the dry land and irrigated rotations was harvested and shocked, and plowing and hauling manure for the maximum of production completed.

The hogs were turned in on the corn in rotations 65 and 69, and one lot was turned in on the corn in field I, in connection with pasturing third cutting alfalfa and corn.

No killing frost has occurred to date and all corn is nearly safe from frost.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

North Platte.

One farm on which were 80 scrub ewes and their lambs, was visited during the week ending August 18. The 80 ewes have raised 65 lambs thus far. All summer they have been kept on alfalfa pasture without loss other than 2 head. The ewes clipped an average of 9 pounds. The lambs, which are about ready for market, will be sold in Scottsbluff to a butcher, who is buying a good many of the local grown lambs. This is the first year this farmer has raised sheep and he is well pleased with them. He says it is better than raising hogs. Heretofore he has been raising a considerable number of hogs each year.

Four small bunches of hogs were vaccinated; in all a total of 30 head. All were well at time of vaccination with the exception of one bunch of 3 head. All were in the vicinity of Scottsbluff.

Grasshoppers are still doing considerable damage over the project. However the farmers are fighting them now and are getting rid of a portion of them by using hopper catchers and poison.

One farm sale was attended at which a number of good beef cattle were sold. The price obtained from the cattle was comparatively low, as has been the case when other beef cattle have been sold in the valley during the past few weeks. This is due largely to the high price of winter feeds. Range men report the range pasture in good condition and cattle doing as well as could be expected.

A number of farms were visited this week for the purpose of encouraging farmers to exhibit live stock at the county fair at Mitchell to be held in September. Heretofore not enough of the farmers have been exhibiting their stock at the fair. In fact, as a rule the best stock has not been coming to the fair. Most of the farmers visited promised to bring stock to the fair if at all possible. On most farms help is very scarce at this time of year, which makes it very hard for the farmers to get away to exhibit stock at the fair.

During the week two lots of beef cattle were shipped from the valley. Most of them were 4-year-old steers. One lot of 170 head brought a total of \$17,000. The other lot of 68 head brought an average of \$200 each. The farm of Mr. Yocum was visited this week. During the past year Mr. Yocum has imported several carloads of Holstein cattle. On the whole these cattle have been fairly good individuals. Most of the cattle brought in have been sold to farmers on the project. However Mr. Yocum has just shipped in a carload which he will use himself.

One bunch of 92 shotes were vaccinated in the vicinity of Bayard on a farm where cholera occurred last year.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

North Platte (continued).

A greater part of the week ending September 1 was spent vaccinating hogs with the double treatment. With the exception of one herd of 9 hogs, all the herds vaccinated were well at time of vaccination. In all, 9 herds were vaccinated, representing a total of 414 hogs. A late report from 3 of the herds vaccinated indicates that in one herd of 95 hogs, 7 shotes contracted cholera after vaccination. In another herd of 47 shotes 2 showed signs of cholera. In another herd of 9 pigs one was lost through vaccination. This is practically the first bad results we have had by giving the double treatment.

Two bunches of 77 and 75 herd, respectively, were weighed prior to the starting of the feeding test in which the hogs will be finished for market. One lot will receive ground corn and ground barley in a self-feeder in a dry lot, the other will receive ground barley and shorts in a self-feeder while running on alfalfa pasture.

Four farms were visited for the purpose of encouraging farmers to exhibit live stock at the county fair, the second week in September. The indications are that the live stock exhibit at the county fair will be larger than ever before.

During the week, 20 requests for service were received and 21 farm visits were made.

Uncompahgre.

Eight farms were visited during the week ending September 22. All of the time was taken up with the Western Slope Fair at Montrose.

The live stock exhibit was quite gratifying. There were on exhibit 60 hogs, 38 dairy cattle, 20 Hereford and 35 Shorthorns, and 20 sheep, besides a creditable display of horses and mules. There were 35 exhibitors of live stock.

The hog show was especially strong. The hogs, dairy cattle and sheep were judged by Prof. Morton of Fort Collins and the horses by Dr. Glover of Fort Collins.

One of the features in connection with the fair was a live stock sale in which a small number of hogs, sheep, cattle and horses were sold. The prices received were not high but all felt satisfied with the results of the sale. There was most interest in dairy cattle of which there were 15 head sold. The cows were all grade and averaged over \$100 per head. Two of the heifers imported from Wisconsin last spring were sold. One of these brought \$156 and the other \$140. Hogs and sheep sold at fair value but horses sold low for the quality offered.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Uncompahgre (continued).

Each consignment was made with the understanding that the first animal put up from each consignment would sell regardless of price. The consignor then had the privilege of withdrawing the remainder of the consignment in case the price was not satisfactory. This plan was well taken and in this way no reserve or by bids were allowed.

Truckee-Carson.

During the week ending September 22, there were received 28 calls for assistance, and 7 farms were visited in response to calls.

The Nevada State Fair was held on the project at Fallon from September 17 to 22. All classes of exhibits were smaller than usual and less interest seemed to be shown than heretofore, although there was more preparation for housing exhibits than usual. A new pavillion for housing the vegetable and fruit display was erected in time for the display. The live stock exhibit was hardly half as large as last year. The lack of interest on the part of the farmers was no doubt due to the fact that the premium money paid out last year varied from 50 to 65 per cent of the amounts awarded. This fact, together with the delay in payment from September to the middle of January caused the farmers to lose interest in the fair.

As compared with last year, all crops are in much better stage of maturity and there has been a considerable increase in the number of pure bred animals. These conditions would have contributed to a much more elaborate display at the state fair than was ever possible before, if there had been a better feeling of cooperation among the farmers.

There has recently been imported into the project 15 head of high grade Jersey cattle from California, 41 head of pure bred Shropshire sheep from California, 1 registered Holstein bull, and a flock of four Shropshire sheep (three ewes and one buck) from England. A large number of pure bred bucks were purchased by local sheep men at the Salt Lake ram sale.

Up to the present time, there has been no killing frost in this valley, and all crops are expected to fully mature before frst. Ranchers consider this one of the best growing seasons in the history of the project.

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DEMONSTRATIONSON RECLAMATION PROJECTS.

Field Notes.

Boise.

During the week ending September 22 hogs were weighed for Mr. Mitchell, who has fenced a small stubble field which he expects to pasture with hogs and he wishes to know if the gain will justify the expense of fencing.

Mr. Jones has a bunch of shotes which he has fed on green corn and wishes to find gains made in that way. He was advised to feed small amounts of tankage or middlings in connection with the corn.

Mr. Yaggy whose hogs were weighed 11 days prior to the weighing of this week has been feeding ground barley and buttermilk. The hogs, which weighed 124 pounds at the first weighing, gained 20 pounds per head in the 11 days, consuming during that time 1268 pounds of barley and about 100 gallons of buttermilk. At current prices for feed and pork, the gains for the 11 days made a net profit of \$26.30. There were 17 hogs in the lot.

Silo filling is the special order of the day. Most corn is in prime condition for silage, having so far escaped the frost. A circular letter has been sent out to the silo owners asking for data relative to the amount of shrinkage in the 48 hours after filling is completed.

The 7th annual Harvest Festival at Nampa occurred this week. There were fair exhibits of fall crops and vegetables with a few creditable exhibits of live stock. The Nampa Festival is only a street fair and the lack of buildings is a handicap to an extensive exhibit of either live stock or farm products.

A good rain fell Saturday night. This is the first rain of any consequence for considerably more than three months, during which time not enough rain fell to settle the dust. For 90 days or a little over, there had not been a drop of precipitation.

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WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

San Antonio.

During the week ending September 29, the maximum temperature was 93, minimum 52 and greatest daily range 34. There was no precipitation and the entire week was favorable for field work and all outdoor operations.

All fallow rotation plats and other fallow fields were harrowed and all orchards were cultivated. A part of the pasture was double disked, preparatory to seeding oats for winter pasture. Field D4 was plowed in preparation for seeding oats for winter pasture. Gathering corn on field C5 was completed and the stalks were cut. A part of the sorghum hay was hauled in from the rotation plats. Some cotton was picked and some miscellaneous weeding was done.

During the week ending October 6, the maximum temperature was 97, minimum 54, and greatest daily range 41. There was no precipitation and the soil is again becoming dry.

The principal field work done was picking cotton. The second picking in the variety test on field F3 was made. Cotton in the root rot experiment on field AB8 was also picked. A number of the rotation plats, on which volunteer oats were growing, were double disked. Sorghum varieties on field D3 were cultivated, as were the sorghum plats in rows in the rotation experiments. Considerable miscellaneous weeding was done.

Dr. T. Yokoi of the Tokyo Imperial University and Mr. Glover of the Southern Products Company visited the station on Friday.

APPOINTMENTS

Requests for appointment of aliens.

Amplifying notice on page 99 of the Bulletin of September 22, 1917, it is requested that hereafter all requests for appointments contain specific information as to whether the appointee is an American citizen, and, if not, what steps have been taken by him to become a citizen.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Boise.

Report of Meridian Wool Pool

The plan to organize the pool, which was to be of ranch wool only, throughout the Boise Valley, was the result of a visit to Boise, Nampa and Caldwell of the demonstration wool car of the Department of Agriculture. When the plan was first proposed it was hoped that some practicable system of grading the wool could be evolved but this part of the plan was not developed, partly because of market conditions and partly because of the small quantity of wool pooled.

The matter of the organization was discussed with County Agent Williams, of Ada County and some of the ranch sheep owners of the Valley all of whom were in favor of the plan. A meeting to discuss the organization and get it before the sheep owners was called by announcement through the County papers and a circular letter to all of the sheep men whose names were known, at Meridian on April 7. In the letter it was requested that those who could not attend the meeting send in an expression of their opinion of the idea with a definite statement of their readiness to support it, if they expected to do so, in order that the extent of interest in the plan might be known. A fair response was received to these letters but the meeting was very poorly attended and another meeting was called for April 14.

The second meeting was even more poorly attended than the first, but it was believed that this was due to the rush of farm work rather than the lack of interest in the pool. Three of the men present at this second meeting agreed to become responsible for the plan and accordingly a warehouse was rented for two months, with the option of holding it for a longer time. The date was set for the first receipt of wool and this office and the office of the County Agent, at Boise, were requested to receive the wool and issue receipts for it.

On the first day set no wool at all came in, although letters had been sent out with a statement of what was decided at the meeting and of the date when wool might be delivered. The following week, however, deliveries being requested on Saturday only, 14 consignments, totaling 5521 pounds gross, were received. Another letter was issued showing the results of the day and during the week some personal work was done as had been done previously. On the following Saturday, 6 consignments, totaling 2922 pounds gross, were received. On Saturday, May 26, 12 consignments, totaling 4483 pounds, were received, and on June 2, which was the last regular day for the pool to remain open, 7 consignments, totaling 3292 pounds, were received. For each of these a receipt or memorandum agreement was issued in duplicate, one copy being given to the consignor and the other being held to be turned over later to the selling committee.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Boise.

Report of Meridian Wool Pool (continued)

The following is a copy of this memorandum:

MEMORANDUM OF AGREEMENT

Meridian, Idaho.
_____, 1917.

This is to certify that _____ has on this date delivered at Groves' Warehouse in Meridian _____ pounds gross of wool, contained in _____ bags, _____ pockets, and consisting of _____ fleeces of _____ breed, with the understanding that said wool is to become and remain a part of a pool being made of 1917 ranch clips, expense of storage, insurance and sale to be pro-rated against all wool stored.

It is also understood that a general meeting of consignors shall be called as soon as all wool has been received, for the purpose of electing a selling committee to have charge of the disposal of the pool.

It is further agreed that no individual or individuals, temporarily in charge of the pool shall be responsible for any loss from fire, theft, or other cause.

All wool shall be insured against fire, as received.

_____, Weigher

_____, Consignor.

Several small consignments were delivered at the warehouse at odd times during the following weeks and two consignments were received the day the wool was shipped. As the wool was received at the warehouse it was insured against fire.

On Saturday, May 26, a meeting was held at the warehouse where the wool was being stored at which time a committee of three from the consignors was elected to have complete charge of the disposal of the wool, and authorized to hold as long or to sell as soon as they saw fit. The selling committee, while believing the price of wool would continue to advance, decided, in view of the fact that the pool was new and that a good many of the consignors needed the money for their wool and that the price already was exceptionally strong, not to hold the wool for any length of time, and so called for bids, notifying the prospective buyers who might be interested that bids would be received on July 10. Only 3 bids were made,

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Field Notes.

Boise, (continued).

Report of Meridian Wool Pool (continued)

one being for 61 cents straight, another for 61-1/2 cents for coarse wool and 51-1/2 cents for fine wool and the third being for 63 cents straight with no dock for tags. The 63 cents bid was accepted and the wool was shipped out on July 14.

A statement showing the name and address of each consignor with the weight of wool consigned by each was forwarded by this office to the purchaser of the wool, the Oregon City Mfg. Company, of Oregon City, Oregon, and payment for the amount of the shipment was immediately remitted to the chairman of the selling committee. A statement was then made to each consignor showing a dockage of 1 per cent for tags on a basis of which, through a misunderstanding on the part of the Oregon City Mfg. Company, the payment for the wool had been made. Later, when the misunderstanding was cleared up, payment for this dockage was recovered and checks for the amounts issued to the consignors, accompanied by a letter explaining the cause of the delay.

A number of the consignors of the pool have been seen since payment was made and the only criticism so far expressed has been in regard to the fact that the wool sold for a flat price per pound, inferior wool bringing as much per pound as better grades. This criticism was made by a man who consigned one of the poorest lots of wool in the pool, a fact of which he was aware and which he freely admitted. Sentiment is strongly in favor of repeating the pool another year, and without very much question the number of consignments will be much larger than they were this year.

Considerable opposition to the pool was offered by local buyers in attempts to discourage wool growers from consigning their clips and even in attempts to purchase wool which had already been placed in the warehouse. Through this opposition quite a number of the largest and best clips of the Valley, which would almost certainly have been pooled and some of which had been pledged to the pool, were sold privately, but none which had been definitely consigned was taken from the pool. The wool sold privately brought prices ranging from 45 to about 55 cents a pound.

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Field Notes.

Boise (continued).

Report of Meridian Wool Pool (continued).

The following statement shows the more important features of the transaction:

Gross weight of wool pooled, pounds.....	18,985
Shrinkage in warehouse, pounds.....	1,060
Tare for bags, pounds.....	373
Net weight of wool, pounds.....	17,552
Number of consignors.....	41
Maximum individual consignment, pounds net.....	1,639
Minimum do. do. do. do.	47
Average consignment, pounds net.....	428
Shrinkage in warehouse, average per cent.....	5.6
Maximum, per cent.....	15.0
Minimum, per cent.....	0
Total expenses of pool.....	\$139.02
Warehouse rental, 2 mos. 25 days @ \$25 per mo.	\$70.00
Insurance.....	57.80
Incidentals (loading, telegrams, telephone, etc..	11.22
Selling price per pound, cents.....	63.0
Expenses per pound, cents.....	0.8
Net price per pound, cents.....	62.2

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Tieton.

Agricultural Conditions in the North Coast Country.

The following notes are from a report made by Mr. Bean covering a trip he made about the middle of August:

The trip to Seattle, Tacoma, Portland and intermediate points was made for the purpose of becoming better acquainted with dairy markets, live stock markets, the demand for alfalfa hay and dairy conditions in general. The trip was planned to extend into Tillamook County, Oregon to visit cheese factories and into other districts to visit cooperative bull associations but advice from the North Yakima office that a state college extension man could be on the Tieton during the week ending August 18 for some planned cooperative work made it seem advisable to postpone the Oregon travel.

A large amount of alfalfa hay is shipped annually from the Ellensburg valley to Puget Sound dairymen in competition with Yakima alfalfa. At this time Ellensburg and Yakima prices average about the same with the identical tendency in both sections to hold unsold hay for better prices. Very little hay has been baled in Ellensburg this year.

Ellensburg stockmen are showing a decided preference for beef production and a declining popularity of dairying. Factors contributing to this preference are the availability of the adjacent range the high price of beef, the high price of alfalfa hay, the presence of inferior dairy cows which makes the present relation between feed and butterfat prices still less profitable than with good cows.

The Ellensburg valley produces much butter but no cheese. The greater part of the cream is handled in local creameries and the remainder is shipped to Seattle.

The Seattle butter market was quoted at 44 cents for city creamery bricks, with butter-fat at 47 cents. The Yakima creameries establish their butter-fat prices on the routes at 2 cents less than the Seattle butter-fat quotation. Triplet cheese was selling at 22 and 22-1/2 cents to the factories, which prices are inclusive of 1/4 cent per pound commission and freight from the factory.

Seattle commission firms were unanimous in predicting higher prices for dairy products. Fifty cent butter was looked upon as a certainty and 60 cents a possibility. Cheese is only slowly making the rise begun by butter during the middle of July. An increased western demand for butter and cheese is expected with the opening of the western army cantonments.

Condensaries are now paying \$2.45 per cwt. for whole milk and a five cent advance is predicted soon. At the same date last year price of whole milk was \$1.85 per cwt. At present, also, inspection as to butter-fat content and quality is much less than in 1916.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton.

Agricultural Conditions in the North Coast Country (continued)

Seattle stockyards receipts are very light at this time. Prime hogs are quoted at \$15.65 and steers at \$9 per cwt. A heavy run of dairy stock is anticipated this fall but the country holdings of hogs and steers are regarded as below normal and light trading is therefore expected.

Report of a previous trip to Tacoma contained mention of the efforts of the Pierce County Rural Development Association, a branch of the Rotary Club, to finance farmers in buying cows and by cooperation with the Western Washington Experiment Station to assist in the selection of those cows. The form of agreement with the farmer buyers specified, among other things, that the cows so purchased be imported into the county, that they be bred only to pure bred bulls, that each farmer keep individual feed and milk records on his herd and that no heifer calves be sold without the consent of the secretary of the Development Association. The plan was theoretically ideal for its operation would increase the dairy cow population of the county, it arranged for reasonable security and easy payments, it proposed to protect the purchasers against poor cows by the assistance of expert selection, it provided for proper breeding and planned to retain all desirable heifer calves for county herds. Another interesting phase was the proposition to require each farmer to keep his own milk and feed records.

A large number of desirable cows were purchased by this plan but many of them were bought within the county. The payments have been quite satisfactory. Pure bred bulls have usually been used on these cows. The milk and feed records, however, have been kept by only a few farmers and those kept in a very desultory manner. It is peculiar, and rather characteristic, that dairy farmers are usually very much interested in the work and results of cow testing associations but are markedly negligent in doing this work themselves.

County agriculturists, state college extension men and farmers agree that Puget Sound dairymen have this year stored the largest crop of roughage ever grown in that section. Haying weather was ideal and the crop was heavy. Many new silos are built or planned and ensilage crops promise well. To this extent at least the coast dairymen are slightly more independent of the alfalfa hay from the irrigated districts. But even under the improved conditions a very large amount of alfalfa hay will be required and dairymen in that section are extremely interested in the price of hay.

Professor Linklater, of the Western Washington Experiment Station, and two representative Puyallup Valley dairymen, had just returned from a trip into the Yakima valley to contract a large amount of hay. The prevailing prices of hay discouraged any buying at this time.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Tieton.

Agricultural Conditions in the North Coast Country (continued).

Professor Linklater expects that a great many Puget Sound dairy cows will be sold for beef this fall or early winter due to the high price of feeding stuffs. He believes that a 25 per cent reduction of the dairy stock in that region is to be anticipated, unless there is a readjustment between the prices of feeding stuffs and milk that will insure dairymen against the losses which seem probable under present prices.

The first cutting of 1916 alfalfa hay began selling at \$9 per ton, baled, f.o.b. North Yakima. The freight to Seattle is \$2.20 per ton. This year's initial price was \$15 f.o.b. North Yakima. Coincident with the prices just quoted condensaries were paying \$1.85 and \$2.45 per cwt. for milk respectively. The increase in milk price was therefore but 32 per cent as compared with a 66 per cent increase in the price of alfalfa hay and approximately 75 per cent increase in the price of grain.

The Ranier National Forest is this year carrying 52,506 sheep, 7,344 cattle and 44 horses. Of this number the Cowichee Cattle Co., of the Tieton Project, has 1,658 cattle. The Forest is carrying approximately 1000 sheep and 400 cattle under special "war emergency" permits of which number the Cowichee Company has approximately 50 cattle.

On a previous visit to the office of the Supervisor of the Ranier Forest it was learned that the Cowichee Cattle Company was not recognized as a cooperative grazing association. A reorganization effected at the Company's annual meeting last winter has provided them with a more desirable organization and secured this recognition from the Supervisor's office.

Methods of assisting the Supervisor's office in securing the proper application of new permittees and acquainting them with the range regulations were discussed on this visit.

A situation which is more or less true with all the smaller cheese factories in the Puget Sound country was emphasized near Chehalis where the factories are considering closing down during this period of sharp competition with condensaries. Some factories have felt the competition so severely that they are already closed. The condensaries are not only paying \$2.45 per cwt. with the prospect of an increase in the near future, but are less rigid in milk inspection than many of the cheese factories desire to be.

The Citizens' Club of Chehalis and surrounding farm country has employed a graduate of the Washington College of Agriculture as its secretary. Plans for cooperation between Chehalis dairymen and Tieton alfalfa growers were discussed with Mr. Dupertes.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton.

Agricultural Conditions in the North Coast Country (continued)

In Portland a visit was made to the Oregon Cooperative Dairy Exchange, of which Mr. O. C. Simpson, formerly of the Oregon State College, is manager. The exchange is an association of Oregon creameries and is at present having decided success in handling butter. Cheese, both of Oregon and Washington make, will be handled provided sufficient bulk can be secured to enable the Exchange to be a factor in the market. Several suggestions for the possible cooperation of Yakima factories were discussed with Mr. Simpson and the Exchange may prove a desirable outlet for Yakima cheese.

Dairy commission firms were visited in company with Mr. Simpson and a closer acquaintance with Portland cheese market conditions and requirements was thus secured. Here, as in Seattle, there was optimism in regard to the prices which dairymen will receive for butter-fat this winter.

Receipts of both cattle and hogs were light at the Portland Stock Yards this week. The top prices for the week were \$8.50 for steers and \$15.75 for hogs. The bulk of both sold considerably under top prices for there is a marked lack of finish in present shipments.

The dry and hot weather of the past 45 days has seriously affected grass, even on the higher ranges, and much stock is reported as not doing well. Sentiment among commission men was that there will be a decline in the value of stockers with prime stuff at a premium during the next few months.

Packers are killing everything that will do at this time and their demands for more stock is strong. Cows are selling around \$7.00 for the best and inferior lots find but slightly reduced prices.

Shoshone.

During the week ending September 15, 36 farm visits were made. Messrs. F. D. Farrell and Dan Hansen spent two days on the project. With them a number of farms were visited about grass pastures, Northwestern Dent corn and Pringle Champlain wheat.

N. P. Williams is hogging barley very satisfactorily with spring pigs. Very little grain passes through the shotes, probably because they find it necessary to chew the grain in getting it out of the husk. Also there is very little grain on the ground, since they seem inclined to bite the head off of the standing straw.

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Field Notes.

Shoshone (continued).

During the week ending September 22, 2 days were spent in attendance at the Billings Fair and in a visit to the Huntley Experiment Farm.

Assistance was given one man in the filling of his silo and in selecting seed corn. A representative of the County Fair was assisted in soliciting exhibits from project farmers.

During the week ending September 29, 6 farm visits were made and 13 office calls were received.

A local farmer received two young Guernsey calves which were expressed from Wisconsin. They were received in good condition and cost \$25 each laid down in Powell.

The County Fair was attended and assistance given in getting exhibits ready.

Five silos have been filled or partly filled this year. A concrete silo which is partly constructed will be filled. Three will not be filled because the farms are rented and no silage crop raised.

The Great Western Sugar Company has offered to sell those farmers who raised beets, dried pulp at \$25 per ton, f.o.b. Powell, and dried pulp mixed with 20 per cent molasses at \$30 per ton. This will be cheap feed compared with other feed at present prices.

A recent survey of the pasture situation on the project shows that of the plantings made in 1916 a total of 11 were sufficiently successful to be used as pasture during the present season. Of the 1917 plantings, 13 had produced stands by or before August 31. The 24 pastures which now appear to be assured are distributed throughout the project, and their condition, generally speaking, is such that the general establishment of irrigated pastures on the project may now be regarded as assured. Practically without exception, the failures which have occurred in pasture plantings on the Shoshone have resulted from insufficient irrigation. This fact is so obvious that the farmers concerned fully appreciate it, so that from the standpoint of the general pasture situation the failures have not been without value.

Uncompahgre.

During the week ending September 29, 17 farm visits were made.

Assistance has been given, in cooperation with the County Agent of Delta County, in the location of sheep for farmers. Several local men were found who would supply ewes in small numbers to farmers. The price for good grade ewes range from \$12 to \$15 per

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Uncompahgre, (continued).

head.

A local farmer marketed four carloads of hogs during the week. They were well finished and weighed an average of 250 pounds. They brought \$18 per cwt. at Olathe on the Project.

State Extension Director French visited the project during the week and completed arrangements for the employment of a County Agent in Montrose County. With the employment of the man in Montrose County all of the Project will be covered by Agents.

Many potatoes and onions are being harvested and marketed. The potatoes are bringing \$1.40 per cwt. and onions \$2 per cwt.

Requests have been received for an importation of dairy cows this fall. Several farmers have sold their grades and desire to purchase pure breds.

Lantern Slides on Sheep Husbandry.

Through the courtesy of the Animal Husbandry division, this office has secured the use of negatives for the preparation of about 60 lantern slides illustrating various features of sheep husbandry. The slides will be made in duplicate, and the two sets will be reserved exclusively for the use of our field men. Probably one set will be reserved for the men whose projects are located west of the Mountains and the other for the men on the eastern projects. The slides illustrate the principal breeds and market types of sheep, classes of wool, and structures and equipment used in sheep husbandry.---F.D.F.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Huntley.

The maximum temperature for the week ending September 29, was 81, minimum 32, and precipitation .03 inch.

First autumn occurred on September 22, when the temperature recorded was 32. Corn and other late crops are fairly well matured. Corn and sunflowers for silage were harvested during the week. Seventy tons of corn and 15 tons of sunflowers were placed in the silos. Sunflowers, variety Mammoth Black Russian, were grown in rows 40 inches apart with two widths of thinning in the row, 15 and 6 inches. The yield on the plat thinned to 15 inches was at the rate of 16.91 tons per acre and on the plat thinned to 6 inches at the rate of 19.46 tons per acre. Each plat contained .36 acre. Harvesting was done with a corn binder.

Yields of silage corn were as follows:

<u>Plat Number</u>	<u>Variety</u>	<u>Pounds, per plat</u>	<u>Tons, per acre</u>
A-IV- 1	Minnesota No. 13	1762	3.52
- 2	Eikers Yellow Dent.....	3192	6.38
- 3	Northwestern Dent.....	3698	7.38
- 4	Minnesota No. 13.....	3302	6.60
- 5	Eikers Yellow Dent.....	3842	7.68
- 6	Northwestern Dent.....	5598	11.18
- 7	Minnesota No. 13.....	4141	8.28
- 8	Eikers Yellow Dent.....	4418	8.82
- 9	Northwestern Dent.....	5172	10.34
-10	Minnesota No. 13.....	4457	8.90
-11	Eikers Yellow Dent.....	5518	11.02
-12	Northwestern Dent.....	6626	13.24
C-VI- 1	45 acres Northwestern Dent.....	26192	9.03
Average	4 plats in field A-IV, Minnesota No. 13		6.82
"	" " " " " Eikers Yel.Dent...		8.47
"	" " " " " Northwestern Dent.		10.58

Beet harvest on the project was started on September 26. Several farmers are starting pastures of mixed grass this fall. Mr. A. A. Knoke in the Wheatley district now has 15 acres planted to pasture. Part of this pasture was planted in the fall of 1916 and the remainder in the fall of 1917. The pasture planted in 1916 has been used for pasturing sheep during 1917. Mr. Knoke reports that the carrying capacity of this pasture was at the rate of 6 ewes and their lambs per acre.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.Siloing Beet Tops. feed for

The present demand and high prices for/live stock have stimulated interest in the possibilities of making a better utilization of sugar beet tops. The common method of utilization, in which the live stock are allowed free run of the beet fields after harvest is open to several objections, particularly from the standpoint of efficiency. Attention now is being directed to methods of handling the tops in such a way as to eliminate the common wastes, and the question of siloing them is receiving consideration. The practice of making and feeding beet top silage has long been established in certain European countries but in America it has begun to develop importance only recently. In order to secure first-hand information on the subject, a visit was made on October 2, 1917, to the farms of the American Beet Sugar Company at Lamar, Colorado, where the siloing of beet tops has been tried for one year. Most of the comments made below are based on statements made by the sugar company's farm superintendent, who is enthusiastic over the results secured in last year's trial. The Company stored and fed 420 tons of beet top silage last winter, and preparations are now being made for handling about 2,000 tons. There doubtless are a great many points regarding beet top silage which needs investigation. The following comments, therefore, should be regarded as suggestive rather than final.

Principles.- It appears that the principles which govern the successful storage of corn silage apply equally to beet top silage. There must be complete freedom from air pockets in the mass and the latter must be free from all outside air. This necessitates (1) adequate packing and (2) complete covering.

The Silo.- silos ordinarily used for corn doubtless would serve also for beet tops, but it has been found that much less expensive arrangements can be used with the latter. The silo used at Lamar is a pit similar to the old-fashioned potato pit. It is 60 feet long, 12 feet wide at the bottom, 16 feet wide at the top and about 5 feet deep. The ends slope so as to make it possible to drive in and out of the pit with the wagons used in hauling the beet tops from the fields. The bottom of the silo should be slightly sloping so as to facilitate drainage of any liquid material which may leach out of the silage. Sufficient beet tops are used to fill the pit and to make a pile 3 or 4 feet above the surface of the ground. The pile is rounded off at the top much the same as is the case in the old-fashioned potato pits. The pit can be made with an ordinary slip scraper, the sides of the excavation being smoothed and properly sloped through the use of spades or shovels. The size of the pit can be varied in accordance with the quantity of material to be placed in it. From calculations made at Lamar, it appears that the density of beet top silage is roughly comparable to that of corn silage. It probably is a good plan to have the pit fairly

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Field Notes.

Siloing Beet Tops (continued)

narrow and to increase its capacity by increasing its length. In this way the surface exposed during the feeding period is minimized, as the feeding is done from one end. It is reported that several farmers in the Lamar district this fall are planning to use pits 4 feet wide at the bottom and about 6 or 8 feet wide at the top.

Filling the silo.— Within about 3 to 5 days after the beets are dug the tops are hauled to the pit. At this time they are only slightly wilted, as they have been piled at topping time. They are placed into the pit just as they come from the field, without cutting. The bottom of the pit is covered with about 18 inches of loose straw. On top of this the first layer of tops is placed. The wagons containing the tops are driven into the pits and unloaded, so that in passing over the mass they assist in the packing. It is suggested that the wagons should not be driven in the same tracks each time as this may result in unequal compression, which may be undesirable.. Additional packing is accomplished by the use of horses and, in some instances, heavy rollers. The sugar company last year used a roller clod-crusher. When the first layer of tops has been well packed and has reached the thickness of about 6 inches, common salt at the rate of 5 to 10 pounds of salt per ton of beet tops, is sprinkled over the latter. Then a fresh layer of straw 5 or 6 inches thick is laid down and another 6 inches of packed tops is added. This process is repeated until the pit is filled and the top of the mass rounded off above the surface of the ground. It has been reported that the use of straw is not necessary, but it is believed to be desirable in that it reduces the "washiness" of the silage and also facilitates effective utilization of straw. Last year, the silo at the sugar company's farm contained about 400 tons of tops and 20 tons of straw, so that the proportion of straw to tops was about one to twenty, by weight. When the last layer of tops is laid down a final layer of straw is scattered over the mass and the entire pile is covered with about one to two feet of soil. The soil is placed on the mass to exclude air, shed water, and prevent freezing. The thickness of the soil layer should be determined by these three requirements. It should be emphasized that in the preservation of silage the exclusion of air is a primary consideration. The filling of the silo should be completed as promptly as possible after it is begun so as to prevent spoiling which might follow fermentation near the exposed surface. If layers are added gradually without there being long periods when any particular layer is exposed to air, the filling of the silo could be extended throughout the beet harvesting season. Difficulty probably can be avoided in this connection if the principles governing the keeping of corn silage are observed.

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Field Notes.

Siloing Beet Tops (continued).

Feeding the silage.- At the sugar company's farm at Lamar, the silo was opened at one end about 30 days after the filling was finished. At this time the silage was in excellent condition. It was cut from the mass in sections in the same way as hay is cut and fed from the end of a stack. It was planned to feed out each section in two days. In this way waste and spoilage were avoided. The quantities fed were approximately equal to the usual quantity of corn silage. It was found that a thousand-pound steer would eat as much as 40 or 50 pounds a day, although less than this quantity was actually fed. The ration used at Lamar last year included alfalfa hay, beet top silage, wet beet pulp, molasses and cotton seed cake. It seems likely that the beet top silage could be used as a substitute for corn silage in ordinary feeding operations, although it is possible that some care would be necessary in connection with the laxative effect of the beet top silage, particularly if it included no straw.

Quality and feeding value.-Beet tops, as they are brought from the field, contain beet leaves and the crowns of the beet roots. The crowns are rather hard and are oftentimes large and difficult for the animals to swallow. These crowns contain a high proportion of carbohydrates. In the silage, the leaves and crowns are soft, as if they had been cooked, and are readily eaten without any difficulty from "choke." The silage is very succulent, which makes it desirable to mix straw with the tops in making the silage and to feed the latter in connection with some dry roughage. In this connection, Henry, in "Feeds and Feeding", recommends corn stover, straw or hay. Samples of the silage made of beet tops and straw were analyzed by the chemist of the American Beet Sugar Company and found to contain very nearly the same constituents, quantitatively and qualitatively, as corn silage obtained from a field which it had been estimated would produce 40 bushels of corn (grain) per acre. During the winter of 1916-17, 400 steers were fed for a period of 115 days, during the last 85 or 90 days of which period they received approximately the following ration: alfalfa hay, 8 pounds; beet top silage, 25 to 30 pounds; wet beet pulp, 20 pounds; molasses, 3 pounds, cotton seed cake, 2 pounds. During the entire 115-day period these steers made an average daily gain, according to the farm superintendent, of 2.8 pounds, and their dressing percentage was very satisfactory. It is estimated that the beet top silage has a hay-replacement value of somewhat more than 3 to 1; that is, it would require somewhat less than 3 pounds of beet top silage to replace 1 pound of hay, in a hay-silage ration. It was reported that the silage was tried with satisfactory results last year by two dairy farmers in Eastern Colorado.

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Field Notes.

Siloing Beet Tops (continued).

Yields and costs.-The acre-yield of beet tops is a highly variable quantity. In the Lamar section, yields as high as 10 tons of tops per acre were reported. The top growth in that section may be above the average. At three of the Western Irrigation Agriculture field stations the beet top yields have been estimated in connection with the irrigated crop rotation experiments. The yields of tops as estimated have varied widely. The average results secured to date are summarized in the following table, in which the determinations shown were made on quarter-acre plats:

Station.	Years	Determinations		Average yield, tons per acre		Relative yields, Per cent.		
		Per year	Total	Beets	Tops	Beets	Tops	Total
Scottsbluff...	5	14	70	15.0	4.7	76	24	100
Huntley.....	4	14	56	11.0	5.7	65	35	100
Belle Fourche.	1	15	15	10.0	4.7	70	30	100

According to these figures, the yields of tops can be expected to average from about 1/4 to 1/3 of the total yield of beets and tops, and to be somewhere in the neighborhood of 5 tons per acre, on the average. The farm superintendent at Lamar stated that by valuing their beet tops at \$5 per acre, straw at \$1 per ton, and salt and labor at actual cost, the silage in their 420-ton pit last year cost about \$1 per ton, including all the expenses of excavation, transportation, packing and covering. The cost would vary between wide limits, depending on the yield, the extent of the operations and the efficiency with which they were conducted.

Advantages.- The following are some of the advantages of siloing beet tops as pointed out by people who have experimented with the practice:

1. The full feed-value of the tops is secured; whereas, in field feeding much of the value is lost by drying out, tramping in the ground, and other waste.

2. Difficulties with "choke", which are common in field feeding, are avoided.

3. A succulent, warm feed is provided during the winter feeding period, when beet pulp is frozen much of the time.

4. An inexpensive feed is produced from beet tops and straw, both of which frequently are waste products.

5. The silage will keep all winter and its use may thus be spread out over a long period, whereas field feeding necessarily must be crowded into a short period.

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Field Notes.

Siloing Beet Tops (continued).

These advantages are sufficient to suggest the desirability of siloing beet tops. The practice appears to warrant serious consideration by farmers on the reclamation projects, some of whom probably will be able and willing to give the practice a preliminary trial during the present year. - F. D. F.

Minidoka.

Other than answering necessary calls the week ending September 15 was spent in work with the Project Fair at Burley. Breeders of pure bred stock were assisted in selecting the best types and fitting for show. The result was an exceptionally strong show in the beef and dairy cattle departments and in the sheep department. The quality of most of the stock shown was good and the different types were of much interest to all farmers. As the pure bred stock were in better shape and better groomed than in the past, it appeared better to the public which had been inclined to think that grades and scrubs were as good as pure breds.

Most breeders of cattle, hogs and sheep were able to sell all their surplus young stock at good prices. In the future, it is hoped to make the fair a place for the exchanging or selling of the good registered males.

The first frost of the season occurred on the night of the 14th. This was not heavy, however, and the growth of many of the vegetables was not seriously checked.

The Sheep of the Minidoka Project Grazing Association, which had been started from the summer range on the 12th, arrived in Ketchum (the nearest loading station) on Wednesday of the week ending September 22. The trail had been hard, owing to a shortage of feed, as nearly all the outfits in the upper end of the Forest had gone over before them. Seven of the owners were present, assisting in trailing in and cutting out.

The homeward journey by trail had been gone over. It was found to be hard but not impossible. Most of the owners decided to trail in, only two deciding to ship their ewes and lambs in. The lambs in the undivided cooperative band were cut out and shipped home, the dry ewes of the band and the ewes and lambs of the others being started homeward. The most difficult part of the homeward trail is across the Minidoka Desert as the water holes have all been dry since June. However, it is possible to purchase water from dry farmers.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Minidoka (continued).

One outfit a few days ahead of the cooperative bands lost heavily from poison on the regular trail. This was investigated with the Forest Supervisor and a Deputy State Veterinarian. The symptoms and food in the first stomach indicated that most of the trouble was due to ripe lupine pods and seeds. Four hundred and seventy head of ewes and lambs were lost at one place on the trail, the carcasses being so close together that this number was buried in one grave. Because of this danger, the cooperative bands were trailed to Bellevue on the roads, hay being purchased on the way.

All good range ewe lambs of Lincoln, Cotswold and Rambouillet blood have been bought at prices ranging from \$11 to \$13.50 per head. When sold by the pound they brought 16 cents. Sound mouthed ewes are selling at from \$14 to \$16. Broken mouthed ewes are selling at from \$5 to \$11.

Contracting for hay at \$15 per ton in the stack was widespread on the project during the week. A few sheepmen, who had options at \$12 and \$12.50 were quick to close them by wire or telephone from Hailey.

Part of the cooperative show herd of stock shown at the Minicassia and Twin Falls Fairs were shown at the State Fair during the week ending September 29. The results were much better than the owners had hoped for, the exhibit winning four firsts, four second, and three thirds. This was the first year that the project stockmen had shown against hard competition and they were well pleased with the results. The stock shown consisted of two stallions, five Shorthorns and six Duroc-Jerseys, all of which had been shipped in one car. Because of the lack of proper condition, the dairy cattle shown elsewhere were not taken.

At the present time, good pure bred stock is hard to select in Idaho. At the State Fair were Project farmers who were trying to buy Shorthorn cattle, Rambouillet and Lincoln sheep. A number of Shorthorns were sold at auction but they were of an inferior type and sold at high prices. It was possible to secure only one animal desired, a registered Duroc-Jersey sow.

Shoshone.

During the week ending October 6, seven more small calves were shipped in from Wisconsin. Two of them were registered Holstein heifers which cost \$177 each, laid down in Powell. One was a registered Guernsey bull.

A hog buyer from Nebraska is here buying stockers. He has bought 5 carloads at \$16.50 per cwt. Some farmers hesitate to take the risk of feeding high priced grain.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Shoshone(continued).

The following figures are from the report covering the month of September:

Shipments from project:

Alfalfa meal, cars	14
Hay, baled, cars.....	2
Sugar beets, car.....	1
Cattle, car.....	1
Butter, from Cooperative Creamery, pounds.....	5,500

Prices:

Alfalfa in stack, per ton.....	\$16.00
Alfalfa, baled, on cars.....	19.00
Wheat, per cwt.,.....	2.90
Oats, " "	2.10
Barley " "	2.75
Potatoes, "	2.00

Uncompahgre.

During the week ending October 6, a trip was made to Lamar, Colorado, for the purpose of gathering information regarding the dairy situation at that point.

There is a milk condensary situated at Lamar which is supported by 4,000 cows. Most of these cows were imported within the last three years. They were brought in from outside points, mostly from Wisconsin and Illinois. The deals were financed by the condensary owners. The security for cows was furnished at double their value, and half of each milk check was retained by the condensary. The purchase of cows is still carried on by the company under this arrangement.

At present the price of milk is \$3.25 per cwt. for a 3-1/2 per cent test. It was estimated at the time of the visit that 35,000 pounds of milk was being handled each day at the condensary.

One of the points on which information was desired was the method used in raising calves in this district. It was found, of course, that only the heifers were raised. The information gathered was to the effect that whole milk was used nearly exclusively for the calves. All bull calves are sold to dry farmers who are too far away from the condensary to sell milk and who separate the milk and sell cream. The feeds used for dairy cows are silage and alfalfa, and beet pulp from the sugar factories when it can be obtained.

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Field Notes.

North Platte.

During the week ending September 22 a farm was visited on which a number of young pigs had been cured of sore mouth with the iodine treatment. Two applications were sufficient to bring about a complete cure. The owner of the pigs is quite a large hog grower, and has had considerable loss from this trouble. He was well pleased with the outcome of the treatment, and expressed his appreciation for obtaining a satisfactory remedy.

A farm sale was attended at which a number of Holstein cows were sold. As a whole the cattle were of good quality and sold good, most of them bringing \$110 to \$120 per head. There was considerable competition in the bidding which indicates that farmers are anxious to get hold of good dairy cattle.

A Saturday a cattle sale at Morrill was attended at which a number of Holstein cattle were sold. They were some that had been shipped in the valley about one year ago. Some of the offerings were good but as a rule they were on the common order, selling around \$85 per head.

During the week a call was received from the local veterinarian at Morrill to assist him in diagnosing a trouble affecting some shotes in that locality. The trouble proved to be a fairly severe case of poisoning. None of the shotes were lost.

The first frost of the season occurred during the week ending September 29 and potato harvest was started. Several carloads of potatoes were shipped from Mitchell and Morrill. The price received varied somewhat but as a whole they brought around \$1.10 per bushel. The crop appears to be good this year. While some of the farmers are selling from the field, a larger part of them are preparing to hold a large part of their crop. The number of potato cellars on the project has been very noticeably increased this fall. It is estimated that the number of cellars of the project has been increased 100 per cent in order to care for the 1917 potato crop.

One farm was visited for the purpose of conferring with the farmer about starting a hogging-down corn test on his place as he had approximately 35 acres of corn. The plan was attractive to the farmer but he stated that "he regretted to say he had sold the corn for \$40 per acre."

One case of cholera was found in a locality near Minatare, and the herd was vaccinated. This was in the locality where the disease has been breaking out more or less this summer. One other herd was vaccinated, the double treatment being given. In all 39 head were treated.

A one and one-half page circular letter entitled "Importation of Dairy Calves", was issued during the week and mailed to the farmers on the project.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

North Platte, (continued).

The National Swine Show

Three days of the week ending October 6 were spent at the National Swine Show at Omaha, and visiting the Omaha stock yards.

The National Swine Show was a success again this year, both with respect to the number of hogs shown and attendance. The number of hogs shown was about the same as last year, but it appeared that the quality of the exhibits were somewhat better. The attendance was considerably greater than last year.

Seven breeds of hogs were exhibited: Duroc-Jerseys, Poland Chinas, Hampshires, Chester Whites, Berkshires, Spotted Poland Chinas and Yorkshires. In all, 16 states were represented with exhibits, viz, Missouri, Wisconsin, Oklahoma, Colorado, Michigan, Nebraska, Iowa, Illinois, Ohio, California, Massachusetts, Kansas, Kentucky, South Dakota, Minnesota, and Indiana.

The Duroc-Jerseys led again in number of hogs exhibited. There were 315 entries of this breed representing 47 exhibitors and 9 states. The Poland Chinas were second in number of exhibits. There were 271 entries of this breed representing 35 exhibitors and 9 states. The Hampshires were third in number, there being 254 entries representing 23 exhibitors and 5 states. The Chester Whites had 236 entries belonging to 19 exhibitors from 6 states. The Berkshires had 179 entries from 9 states and 9 exhibitors.

The grand champion Duroc-Jersey boar and sow were shown by a breeder from Ohio who won grand champion on boar last year. The grand champion boar and sow of the 1917 show were both sired by the 1916 grand champion boar. The grand champion Berkshire boar and sow were exhibited by a breeder from California. The winners in the other classes will not be determined until later. Only one herd of Yorkshires were exhibited.

On Friday night a meeting consisting largely of swine growers from 25 states was attended. A representative from the National Food Administration was present. The object of the meeting was to determine the attitude of the swine breeders towards the Government control of pork, also to give suggestions as to the best methods of doing this. The swine growers present at the meeting were practically unanimously in favor of Government control, the price to be based on the price of corn at the time it was fed to the hogs. According to information given out at the meeting, by January 1 the swine population in the United States will be 40 per cent below normal, while an increase of 15 per cent above normal will be needed during the coming year to meet the demands.

One forenoon was spent visiting the Omaha swine market. The receipts are running considerably short of last year's receipts. On the whole the hogs on the market were not very well finished, due no

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Field Notes.

North Platte (continued).

doubt to the high price of corn. Quite a number of brood sows were on the market, which indicates the farmers are reducing their breeding stock. Another noticeable feature was the number of shoters on the market. These sold around \$19 to cattle feeders, when top hogs were \$19.50. Only one car of Hampshire hogs was on the market, also one small car of Tamworths. This indicates that these two breeds are not very popular at present with the swine raisers in the Omaha territory. Most of the receipts consisted of Duroc-Jerseys, Poland Chinas and Chester Whites.

One day of the week was spent in Lincoln at the University State Farm conferring with some of the University representatives on matters pertaining to work on the project.

On Monday a farm sale on the project was attended at which a number of pure bred Poland Chinas were sold. The demand for the hogs was good. Spring gilts sold for \$42; boars for \$35, and one 2-year-old brood sow with 6 three-weeks-old pigs topped the sale at \$110. The same day one small bunch of 24 shoters were given the double treatment for cholera.

FIELD NOTES.

Yuma.

During the week ending September 8 the maximum temperature was 105, minimum 67 and greatest daily range 33.

Thirty-six acres were irrigated.

The force was employed during the week chiefly at cultivating and hoeing. Millet varieties from field C7 were harvested and alfalfa from C39 and 40.

Messrs. Camp and Blair made a trip to the Sacaton station and Salt River Valley.

During the week ending September 15, the maximum temperature was 102, minimum 44 and greatest daily range 55.

A total of 30 acres were irrigated

Messrs Camp and Blair left for a short trip to points in Sacramento and San Joaquin valleys where cotton plantings have been made.

During the week ending September 22, the maximum temperature was 106, minimum 49 and greatest daily range 52.

The weekly irrigation amounted to 31 acres. Several loads of gravel were hauled and a number of new turn out boxes on the irrigation system were set.

During the week ending September 29, the maximum temperature was 107, minimum 47 and greatest daily range 44.

Thirty-three acres were irrigated.

A galvanized iron grain bin was received and erected to be used for storing grain for work stock.

The first picking of Egyptian cotton plats was begun this week. No apparent difficulty was experienced at this date in securing pickers as 11 men were secured on very short notice. This first picking reveals a heavy injury to the early opened bolls by the cotton stainer. No such serious damage has been noted before in this locality from this insect and as picking progresses the complaint is general over the entire project. The insect is still abundant on sorghum heads and may be damaging the later bolls badly. Many poorly and prematurely opened bolls, as would result from drought, is the most noticeable effect but the cotton is also stained in spots which will undoubtedly reduce the grade of the ginned fiber.

During the week ending October 6, the maximum temperature was 109, minimum 53 and greatest daily range 54.

A second alfalfa seed crop was harvested from plats C27 and 28. Alfalfa hay was harvested from plats B1 to 17, C21 and 24, D1 to 5 and E3 and 4. This cutting of hay is of poor quality being mostly grass that grew during the hot weather while the alfalfa growth was retarded.

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WESTERN IRRIGATION AGRICULTURE
Field Notes.

Yuma (continued).

Plats A12 and 2 and 3 were prepared and planted to a winter garden.

A stack yard and feeding rack were constructed in the B pasture.

Mr. W. B. Camp left for his home in South Carolina on Friday and will report for military service very soon.

Mr. D. R. Shull has recently passed the examination and enlisted in the aviation division.

Truckee Carson.

During the five weeks ending October 13, the fodder corn from the rotation plats produced an average of 1.7 tons per acre. The yields of the individual plats ranged from 2285 to 4730 pounds per acre.

The third crop of alfalfa yielded on the average of 1540 pounds per acre from a total area of 9.2 acres. The average yield of the year for all alfalfa plats outside the "Y" series is 3.33 tons per acre.

The yields of alfalfa on the treated plats of the "Y" series for the year have shown a decided increase over the untreated checks. The average yield of the 8 treated plats was 3292 pounds and of the 4 check plats 2292 pounds. The single treatment that was given has not been sufficient to raise the yield to the point of profitable production. All the plats should be plowed and another application of gypsum given to the plats previously treated.

The experiments in pasturing pigs on sweet clover and alfalfa with a 2 per cent supplementary ration of barley and tankage was completed on September 22. After that date they have been left in the same pastures but the grain ration was increased to 3 per cent of the live weight.

The alfalfa pasture was rather poor, the soil being somewhat alkaline, and the pigs did not produce gains so economically as they did in 1916 on alfalfa or on the sweet clover this year. The amount of barley and tankage required to produce a pound of gain was 3.54, while those on sweet clover required 3.08 pounds. The pigs on sweet clover had an abundance of pasture. The details of the experiment are shown in the following table:

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Truckee-Carson (continued).

	<u>Sweet clover</u>	<u>Alfalfa</u>
Number of days June 30 to September 22.....	84	84
Number of pigs.....	9	8
Initial weight, pounds.....	527	537
Final weight, pounds.....	904	866
Gain in weight, pounds.....	377	329
Daily gain, pounds.....	4.5	3.9
Daily gain, per cent.....	.65	.57
Barley fed, pounds.....	868	868
Tankage fed, pounds.....	294	294
Grain per pound gain, pounds.....	3.08	3.54

On September 21 the pigs on sweet clover and alfalfa which had been receiving a 2 per cent supplementary ration, were increased to a 3 per cent ration, one-sixth of which was tankage and the remainder rolled barley. The gains made during the 21 days ending October 13 were unsatisfactory, 5 pounds of grain being required to produce a pound of gain on the pigs pasturing on sweet clover and 4.4 pounds for those pasturing on alfalfa. The details are given herewith:

	<u>Sweet clover</u>	<u>Alfalfa</u>
Number of pigs.....	8	9
Initial weight, pounds.....	904	866
Final weight, pounds.....	1023	995
Gain in weight, pounds.....	119	129
Daily gain, per cent.....	.48	.67
Barley fed, pounds.....	497	474
Tankage fed, pounds.....	98	95
Gain per pound grain, pounds.....	5.00	4.40

Belle Fourche.

During the week ending October 13, the maximum temperature was 69, minimum 17 and precipitation .18 inch.

The harvesting of sugar beets was finished. Twenty-two samples were sent to the Scottsbluff Sugar Factory for analysis. The highest per cent sugar was 21.7, the lowest 16.1 and the average for the 22 samples, 19.6. The maximum yield was obtained from rotation 23, 20.86 tons and the minimum from rotation 30, 6.38 tons, the average being 12.29 tons.

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Belle Fourche (continued).

A cellar 14 x 22 for storing the potatoes was completed during the week. The digging of the potatoes on the irrigated rotations was two-thirds completed. The first killing frost occurred on the 8th. when the temperature went down to 20.

APPOINTMENTS.

The Office of the Secretary now refuses absolutely to ante-date appointments. Farm superintendents must be governed accordingly and send in their requests for appointment in ample time to permit advance requests to be made from the Bureau.

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PORK PRICES NOT FIXED.

Recent reports in the newspapers have been to the effect that the Food Administration had fixed, or is about to fix, a price of 10 cents per pound live weight of hogs. These reports have disturbed some of the swine growers on our projects. The Food Administration, on October 22, informally furnished this office with the following information:

(1) The reports above referred to with reference to a fixed price for hogs are entirely without official foundation. The Food Administration has taken no final action whatever in connection with fixing pork prices.

(2) A convention of hog growers recently held in the Mississippi Valley has recommended to the Food Administration that the price of hogs be fixed with reference to the price of corn; that is, that there be established officially a parity between corn prices and hog prices. The convention recommended that this parity be on the basis of 14 bushels of corn to 100 pounds of live weight of hogs. Final action has not been taken by the Food Administration upon this recommendation.

(3) The Food Administration is now arranging for the appointment of a commission to investigate the cost of producing hogs, and it is possible that some action will be taken to fix a relationship between the price of corn and the price of hogs to be in effect at the time the 1918 hog crop is marketed.

The above statements are submitted for the information of our fieldmen so that the latter will be able to reassure swine growers who may have become alarmed at certain reports which have appeared in the newspapers. It is likely that when any definite official action is taken it will be announced promptly through the Weekly Newsletter of this Department.

HAULING BEET PULP FOR STOCK FEEDING.

At the Salt Lake conference last last June, the question was raised as to the distance beet pulp could be hauled for stock feeding. A statement issued by the Great Western Sugar Company contains some interesting data in this connection. According to the statement, beet pulp and molasses were fed to 60,628 head of cattle and 190,190 sheep during the winter of 1916-17 in the following nine districts where the company's Colorado factories are located: Eaton, Greeley, Windsor, Fort Collins, Loveland, Longmont, Sterling, Brush and Fort Morgan. The stock consumed 413,338 tons of pulp and 11,425 tons of molasses. It is stated that, while somewhat more than half the pulp

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Field Notes.

Hauling Beet Pulp for Stock Feeding (continued).

was hauled less than 2 miles, rather large quantities were transported greater distances, as the following table will show.

<u>Distance hauled,</u> <u>miles.</u>	<u>Quantity of pulp,</u> <u>tons.</u>
Less than 2	297,458
2 to 3	61,500
3 to 4	16,000
4 to 5.	15,600
5 to 6	11,600
6 to 7	4,200
7 to 8	6,100
8 to 9	880
Total.....	<u>413,338</u>

Minidoka.

Report on the Second Annual Ram Sale

A part of the week ending September 1 was spent at the Second Annual Ram Sale of the National Wool Growers' Association, at Salt Lake City, and in conference with members of the Association. About 5,000 sheep, mostly rams, were on exhibition. Three thousand eight hundred and nineteen sheep, of which number approximately 2,709 were range rams; 244, stud rams and 866 ewes, were sold through the ring. The average prices of the registered rams was \$76.08 and of the registered ewes \$63.11

It is quite evident that the interest and the demand for good, well bred sheep is on an increase, the supply of registered sheep of the popular types being somewhat less than the demand. The necessity of holding the pure bred flocks to the types that are most popular in the west was quite marked, as indicated by the range of prices for the different breeds.

As in the former sale, the bidding was more or less erratic. As a rule, however, the selection was much more carefully done so that the best individuals of the different breeds topped the sales, although in a number of cases, inferior animals went for higher prices than those of a better type.

As before, the popular sheep among the western buyers were the larger specimens. Size, bone, and style were again the three most important factors.

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Field Notes.

Minidoka (continued).

Report on the Second Annual Ram Sale (continued).

Buyers were present from seventeen states. The heaviest buyers were from the states of Utah (833 head); Idaho (403 head); Nevada (381 head); California (293 head); New Mexico (291 head); Montana (252 head); Wyoming (158 head), Colorado (124 head), and Oregon (71 head). The ewes went to the following states: 140 head to Utah, 189 head to Montana, 200 head to Oregon, 114 head to Wyoming, 89 head to California, 72 head to Idaho and 31 head to Colorado.

The demand for fine wool was very great, better than has been seen in the west for several years. The big smooth Rambouillet, the so-called mutton merino type, was the kind in demand. Wrinkles were severely discriminated against. One or two folds were permissible and usually desired, but the top of the neck and the rest of the body was required to be smooth. In all 1,821 fine wools, practically all Rambouilllets, were sold through the ring. Of this number, 103 were sold individually at an average price of \$286.67, the top price being \$1,325. One thousand three hundred and twenty-four head were sold in groups, mostly in lots of 25 as range rams, at an average price of \$78.67. Two hundred and ninety-four ewes were sold at an average price of \$76.46.

Perhaps no breed is seeing the rapid change in type than the Hampshire is undergoing. The western man is selecting these for bone and size, yet he is giving much attention to the quality and covering of wool, smoothness of body, spring of rib, breadth of loin, levelness of rump, compactness and depth, in other words the most approved mutton type with better shearing qualities. As a rule, the kind desired together with these other qualities, is ruggedness and a conformation that will enable the sheep to stand hard grazing. Nine hundred and ninety Hampshires were sold. Sixty seven were sold singly at an average of \$204.70 and 526 in groups at an average of \$51.08. The top price was \$1600 which was also the top for the sale. Three hundred and ninety-seven ewes were sold at an average of \$71.25.

Owing to two factors, the prospects for high prices for wool and the necessity for raising the ewe lambs for range purposes, the demand for long wools was especially strong. There was some disappointment because there were not more of the long wool breeds offered for sale. One hundred and seventy five Lincolns were sold of which 22 were bid in singly at an average of \$253.63, top at \$650. One hundred and fifty three were sold in lots at an average of \$46.28.

Forty Cotswolds were sold singly at an average of \$224.87. Two hundred and ninety five sold in lots at an average of \$63.93. In this lot was one pen of 25 yearlings, well bred and well fitted that sold at the price of \$125 per head. Seventy five Cotswold ewes were

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Minidoka (continued).

Report on the Second Annual Ram Sale (continued).

sold at an average of \$51.83.

In the Shropshire division, the story of the sale is a repetition of the report of 1916. The demand for this breed is very limited and most Shropshires were taken home. For the past few years, all indications have shown that the Hampshire is preferred among the mutton producers of the west and many Shropshire breeders have changed breeds during this period. The unanimous opinion was that the Hampshires excelled in producing mutton on the range so that it would be better to confine the Shropshires to the corn belt. Seven Shropshires were sold singly at an average of \$79.28, top at \$100. Thirteen were sold in a lot at \$50 each.

Fourteen Corriedales were consigned by the Bureau of Animal Industry. Because of the hard winter and scanty feed on the Wyoming range, these lacked the size favored by the western sheepmen and there was some disappointment on this point although the general type and wool development met with favor. Five were sold singly at an average of \$172, top at \$250. Nine were sold in lots of 3 at \$150 each.

Seventy two half-breed Corriedales were sold at an average of \$86.91. These were of a good type and well developed and met with much favor.

Panamas, the new breed being developed in the vicinity of the Minidoka project, were offered in a far better condition than the lot offered in 1916. Fifty head consigned by Project sheepmen sold readily, 25 at \$70 each and 25 at \$57.50 each.

Oxfords appeared in the sale ring for the first time. As this was a new breed to most of the sheepmen and they were shown in such a condition as to appear at a disadvantage, it was difficult to start the bidding. Ninety five Oxfords were sold in lots at an average of \$26.05. There may be a place for Oxfords in the west but if they are to be sold at full value, breeders must take better care of their stock than had been done with those offered in the ring at the Ram Sale.

One hundred and seventy two Cross-breeds were sold at an average of \$37.93.

The attendance at the Sale was estimated at 1500. It is evident that the standard of the types desired can be learned at this show and no breeder of pure bred sheep should overlook the opportunity of getting the proper standards as set at this place. It is planned to make this show an annual event for a market place for pure bred rams. It will also be of great value to the pure bred breeders in learning the popular types. As a rule, the sheep put up for sale were in a far better condition than those offered in 1916. While it is true that some men state that they would rather see the rams in their natural shape as

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Minidoka (continued).

Report on the Second Annual Ram Sale (continued).

they come from the pastures or the range with no fitting or trimming whatsoever, the bidding does not bear this out so that every exhibitor should take care to put his sheep in the ring in fairly good show shape. In spite of assertions to the contrary, the breeders desire to see the animals in good shape rather than seeing them unfitted and guessing at what they might be with proper care and fitting.

Twenty eight Rambouillets, 27 Hampshires, and 1 Corriedale were purchased by Minidoka Project sheepmen, of which number, one Hampshire and possibly the Corriedale will be used as stud rams.

The distribution of the sheep purchased at the sale for use in the range states is shown in the following table, which accounts for all the sheep sold except 143 rams and 26 ewes which were sent to states not included in the table.

Rams	Utah	Mont.	Wyo.	Idaho	Oreg.	Wash.	Cal.	Nev.	N.M.	Colo.	Total
Rambouillet..	420	2	18	137	18	5	79	350	291	18	1338
Hampshire....	123	222	25	109	1	0	125	3	0	3	611
Cotswold.....	116	0	12	150	25	0	5	3	0	0	311
Lincolns.....	6	28	30	5	27	0	53	0	0	26	175
Oxford.....	70	0	0	0	0	0	27	0	0	0	97
Shropshire...	0	0	0	1	0	0	4	13	0	2	20
Corriedale...	1	0	0	1	0	0	0	12	0	0	14
Cross-breds..	97	0	0	0	0	0	0	0	0	75	172
1/2Corriedale	0	0	72	0	0	0	0	0	0	0	72
Total rams...	833	252	157	403	71	5	293	381	291	124	2810
<u>Ewes</u>											
Rambouillet..	9	0	45	72	200	0	40	0	0	31	397
Hampshire....	61	189	69	0	0	0	49	0	0	0	368
Cotswold.....	75	0	0	0	0	0	0	0	0	0	75
Total ewes...	145	189	114	72	200	0	89	0	0	31	840
Total rams and ewes....	978	441	271	475	271	5	382	381	291	155	3650

Practically all of the week ending October 6 was spent in work with the Third Annual Minidoka County Fair. As in former years, the purpose of the Fair was educational, the main object of it being to display the proper varieties of vegetables and farm products and to show the popular breeds and approved types of live stock. The exhibit as a whole were

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Field Notes.

Minidoka (continued).

good, every department being well filled. In the cattle department, Holsteins were shown from six farms, Jerseys from five, Shorthorns from five, and Herefords from one. The sheep show consisted of Panamas, Lincolns and Hampshires. In practically every class of the cattle and sheep departments, there were from 2 to 7 entries. The hog show was confined entirely to the Duroc-Jerseys, four men exhibiting this breed.

In cooperation with the County Farm Bureau and the Hog Cholera Control Office, an educational booth with photographs, charts, babcock tester, silo models, bulletins, etc., was maintained at the Fair.

Four calls to investigate sickness in hogs were received during the week ending October 13. Sudden changes in feed and the cold nights were the causes of the trouble.

Calls for information regarding the purchase of good range ewes have been numerous this fall. In one district, eight farmers desire to buy from 200 to 500 head of ewes each, or sufficient numbers to consume their surplus hay. In another district, ten men will dispose of their hay in this way. A total of 2200 head of ewes are desired by these ten men of which number only two will accept any spread-mouthed or broken-mouthed stock. Because of unfortunate experiences in the past, there is much prejudice against the aged ewes.

In addition to the range ewes desired, there are unfilled requests for 25 registered Lincoln ewes, 30 registered Rambouillet ewes and 1 Lincoln and 3 Rambouillet rams.

The building of a new creamery was started at Burley by the Mutual Creamery Company of Salt Lake.

Harvesting of the sugar beets started on the 10 th. In only a few districts are the potatoes yet ripe enough to dig.

Boise.

Practically the entire week ending October 6, was spent in connection with the Boise Valley Grazing Association with Mr. McDermott, Treasurer of the Association. A trip was made to the cattle range and about 600 head of cattle rounded up. The range has been short for the past month or more, although it has improved somewhat since the rain of September 22-23. The cattle generally are looking fairly good ins spite of the dry season and shortage of feed with the exception of a number of cows which are suckling calves. Some of these are very thin although all of the calves are in good condition.

There are probably close to 200 cattle left in the hills to be gathered on another drive. It is not practicable to attempt to gather all of the cattle on the first trip as there is no place to

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Boise (continued).

hold them for more than a day or two. Some of the members of the association would like to fence as large a body of land as permissible for this purpose, but the present cost of fencing is almost prohibitive. Mr. McDermott estimates that it would require a minimum cost of \$2500 to fence a half section.

The grazing association cattle arrived in Boise Monday night of the week ending October 13. It required two days of very hard driving to bring them from the crossing of the North Fork of the Boise river to the Boise Fair grounds, a distance of approximately 36 miles. While the stock came through with almost no feed, they were in better condition at the end of the drive than any one had expected. After resting over Tuesday, they were cut out and delivered to their owners on Wednesday. Members of the association who were present during this cutting are withholding judgement of the success of the summer's grazing, pending the arrival of the remainder of the cattle. In general they seemed well satisfied with the condition of the stock but do not know until all the cattle are down what the results may have been. It is known, however, that there have been some considerable losses and it is probable that some of the members of the association will not send their stock back to the reserve another year.

The last three days of the week were spent visiting owners of ranch sheep on the Project to ascertain the extent of interest among them in the proposed sheep grazing association for next year. The interest was found to be quite general in Caldwell district and applications for nearly 2500 head were put in for grazing permits on the Payette National Forest. It is doubtful, however, if that many sheep can be accommodated on the Payette Reserve. On the eastern part of the Project which would come to the Boise Forest, interest in the plan was less general, it being doubtful if a sufficient number of sheep can be secured to justify the organization of an association.

Uncompahgre

An importation of Holstein cows and heifers arrived on the Project during the week ending October 13 from Silverton, Colorado. They are of excellent size and quality and will be sold to local farmers. These animals have been raised at an altitude of nearly 10,000 feet. A sale of sixteen head of dairy cattle was held on Friday at Montrose and the cows sold very low for quality offered. They were owned by local people.

A case of hog sickness was investigated during the week. The symptoms would indicate that the trouble was necrosis. The local veterinarian is being consulted regarding the matter.

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Uncompahgre (continued).

The harvesting of farm products is progressing very satisfactorily in view of the labor shortage. The schools have been closed and the apples are being handled largely by women, thereby relieving the men for the potato picking and other heavier work. The apples are being sold loose at \$1.25 per hundred pounds. They are bulked in the cars. The car shortage is being felt, although all that it is possible to do to relieve the situation is being done. Potatoes are moving out quite rapidly at \$1.40 per hundred pounds. Most of this crop will be stored. Onions are fairly well out of the way. The price ranges around \$2.50 per hundred for this crop.

North Platte.

By the end of the week ending October 13, the potato harvest on the project was about three-fourths completed. As a rule the yields have been very satisfactory. Many large fields are yielding 400 bushels per acre, and several larger yields are being reported.

Three small bunches of hogs were vaccinated with the souble treatment this week. A total of 78 hogs were represented in the three herds.

A hog buyer from the eastern part of the state was in the valley this week looking for a car load of dry brood sows or similar stuff, to ship back to the eastern part of the state to run behind cattle in the feed yards. He is having considerable trouble in locating them. At the end of the week he had not been able to get a full car load, though he is offering \$18 per cwt.

Difficulties following Castration of Pigs.

During the week a farm was visited on which 11 shotes had recently been treated for schirrhous cords. This is a disease that may affect pigs after they have been castrated. In some way the end of the cord becomes infected, and begins to swell forming a sort of gristly or fibrous growth with a puss pocket after the wound from castration. Unless treatment is given the swelling continues to grow and may reach an enormous size, weighing 5 or more pounds. The swelling usually kills the shote in time unless treatment is given. If shipped to market they usually go as tankers. The ailment among hogs has been given considerable attention in connection with the swine work on the project, and from information gathered it seems evident that this trouble is due to faulty castration. Perhaps a greater part of the cases are due to leaving the cord too long. Others may be caused by filthy quarters. When the cord is left too long it more easily comes in contact with infection than if cut off short or pulled out entirely.

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Field Notes.

North Platte (continued)

One farm was recently visited on which scirrhus cord had been giving considerable trouble. A demonstration on castration was given the owner of the hogs, showing him how to make the incision large and well down, and to pull the testicle out rather than cut them off. Since that time this farmer has followed this method and has had occasion to castrate several hundred shotes, and during that time has not had a single case of scirrhus cord.

If the incision is large and well down, and the cords are either pulled out or cut off well up, the shotes kept in clean quarters, and a liberal amount of disinfectant used during the operation, it is believed that this trouble will not occur.

In treating for scirrhus cords on the project, two methods have been tried. One is to make a deep incision into the swollen part until the pus pocket is reached. Then treat the affected part with some strong disinfectant for a few days. This treatment has been successful in a large per cent of cases but not in all, especially if the swelling is large. The other method of treatment is to cut out all of the swollen part, using a sharp knife and plenty of disinfectant. This is rather severe treatment, but appears to be the best in the long run. The shotes will heal up quicker than if the part is merely opened up, and it is a sure way to get rid of them. In the herd where the 11 shotes were recently treated for this trouble, 4 of the shotes were treated by merely opening up the swelling and irrigating it with strong disinfectant, the other 7 were treated by having the swollen part entirely removed. The latter shotes soon healed up and were as well as ever. Three of the others healed up also but the fourth one had to be operated on a second time. When the swollen part is cut out, bleeding is often quite profuse, and bleeding to death is often feared. However, we have not had any losses on this account. Bleeding soon stops, especially if the shote is rather fat.

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WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Yuma.

During the week ending October 13, the maximum temperature was 106, minimum 57, and greatest daily range 49.

Twenty acres were irrigated.

Routine work continued uninterrrupted, consisting chiefly of hoeing Bermuda grass from plat borders and in orchards and nurseries.

Alfalfa hay was harvested from plats C1 to 5, 40 and 41, D6 to 9, 11 and 12. Cowpeas were harvested from plats C32 to 35 for seed. Plat C39 was plowed and A14-1 was manured and plowed.

Both short staple and Egyptian cotton is opening quite rapidly and a shortage of labor is apparent over the entire project.

San Antonio.

During the week ending October 13, the maximum temperature was 95, minimum 42 and greatest daily range 35.

The principal field work accomplished was cotton picking, the second picking in the rotation experiments being started. Plats B6-7 and B6-9 were manured and the manure disked in. Alfalfa in the nursery was irrigated. Some weeding was done.

The maximum temperature, during the week ending October 20, was 89, minimum 36 and greatest daily range 30. White frost was observed on the morning of the 19th, but no frost injury occurred on the station. Precipitation amounting to 1.52 inches occurred on Thursday afternoon and night. This will be beneficial to pastures and will put the land in condition for fall seeding.

The principal field work done was picking cotton. The second picking on the rotation plats was completed. The second picking was considerably heavier this year than during the past two or three years. The total average yield from the rotation experiments was at the rate of 535.6 pounds of seed cotton per acre, the highest from any one plat at the rate of 784 pounds per acre and the lowest at the rate of 20 pounds per acre.

Plats to be seeded to oats and field peas in the rotation experiments were double disked in order to pack and smooth the land, there having been insufficient rain since plowing to get the land in good shape.

Two loads of cotton were hauled to the gin for ginning. Seed oats were cleaned and graded. Seeding of oats for pasture was started on Saturday afternoon.

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WESTERN IRRIGATION AGRICULTURE
Field Notes.

Huntley.

By the end of the week ending October 22, all crops, except corn, had been harvested? Favorable weather made it possible to harvest the oats in BII-III and the dugar beets, potatoes and third cutting alfalfa in the irrigated rotations, under ideal conditions. A severe frost, however, on October 15 injured approximately 15 per cent of the potatoes that had not been dug.

The total yields of alfalfa in the irrigated rotations for the season of 1917 are summarized below:

	No. of Plats	Maximum	Minimum	Average
Spring seeded.....	6	2.39	1.84	2.04
Fall seeded.....	3	3.73	3.17	3.42
Second year.....	11	6.28	4.77	5.71
Third year.....	2	5.90	4.86	5.38
Continuously cropped (6th year).....	4	5.35	3.99	4.65

The yields per acre of potatoes for all rotations in fields K and L-IV ranged from 70.4 bushels, in rotation 27, (Potatoes, oats, rye) to 311.6 bushels, in rotation 64, in which potatoes follow third-year alfalfa. The average yield of all plats in the irrigated rotations in field L-IV was 265.9 bushels per acre, and 203.5 in field K.

A report on the yield of sugar beets will be made as soon as the sugar percentages are returned from the factory.

Scottsbluff.

The first frost of the season occurred the night of October 8 when the thermometer registered 28 degrees. As all crops had matured no damage was done.

It is unusually dry for this time of the year. Beet fields are dry, making the pulling of beets very difficult. The ground being dry and hard some of the beets break off before they will pull out.

The filling of both silos has been completed. One silo was completed just before filling commenced. The yields of silage were as follows:

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Scottsbluff (continued).

Variety	Tons per acre.
Calico (Local field Corn).....	11.80
Youngheim " " "	12.25
Sands, White " " "	12.30
Dry Land Seed " " "	10.47
Sands, Yellow " " "	7.80
Hognes, Yellow (Eastern silage corn).....	15.90
Nebraska White " " "	16.90
Sunflowers.....	22.93

All potatoes have been dug and stored. The yields in bushels per acre from the variety test ranged from 484 (Rural) to 396 (Early Ohio). In a time-of-planting test, in which plantings were made at 4 weekly intervals beginning June 11, the yields decreased consistently with the advance of the planting date.

Truckee-Carson.

During the week ending October 20, the maximum temperature was 80, minimum 16 and precipitation 0.

Experiment in the Treatment of Eelworm Potatoes.

For a discussion of the plan of this experiment and the effect of the different treatments on germination, see report for the week ending June 24.

The rows of the eelworm treatment test with potatoes were harvested October 13, and each row weighed. After taking into consideration the probable errors, the following conclusions seem to be justified from the results obtained in the test:

- 1.- A heat treatment of 30 degrees C for 24 hours did not materially affect the yield, but apparently stimulated germination.
- 2.- A heat treatment of 35 degrees C for 12 hours did not materially affect either the germination or yield.
- 3.- A heat treatment of 35 degrees C for 18 hours did not materially affect germination or yield.
- 4.- A heat treatment of 35 degrees C for 24 hours reduced the germination 18 per cent, and the yield 36 per cent.

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Field Notes.

Truckee-Carson (continued).

5.- A heat treatment of 40 degrees C, for 6 hours reduced the germination 29 per cent but did not materially affect the yield.

6.- A heat treatment of 40 degrees for 12 hours reduced the germination 53 per cent but did not materially affect the yield.

7.- A heat treatment of 40 degrees C, for 18 hours reduced the germination 62% and the yield 40%.

8.- A heat treatment of 40 degrees C for 24 hours reduced the germination 49% and the yield 55%.

This experiment has been conducted in cooperation with Prof. Frandsen, of the University of Nevada, who will later make eelworm counts. A part of the potatoes from each plat has been delivered to him for this purpose.

The onion varieties on the farm of E. S. Funk were topped and weighed October 17. These varieties were planted March 12, in duplicate, alternate double rows having been fertilized with a mixture of acid phosphate and gypsum. The unfertilized rows of the Australian Brown were on the outside of the plat, resulting in a greatly reduced yield so that this row is not included in the computation. As in previous experiments, the Australian Brown were less productive than the other varieties. There was little difference in yield between the Yellow Danvers, Silverskin, and Redwethersfield. There was apparently a small increase in yield resulting from the application of the fertilizer. The results are tabulated below:

Treatment	Australian Brown	Yellow Danvers	Silver skin	Red wethersfield	Yellow Danvers
UNFERTILIZED:					
Plats 1 and 2, area...	.017	.017	.017	.017	.017
Plat 1.....	....	86	82	75	79
Plat 2.....	....	109	130	152	166
Total, pounds.....	....	195	212	227	245
Yield per acre, cwt...	....	114.7	124.6	133.5	144.1
FERTILIZED:					
Plats 1 & 2, area.....	.017	.017	.017	.017	
Plat 1.....	53	90	83	70	...
Plat 2.....	74	182	168	153	...
Total, pounds.....	127	272	251	223	...
Yield per acre, cwt...	74.5	160.0	147.6	131.1	...
FERTILIZED AND UNFERTILIZED:					
Yield, pounds.....		467	463	450	...
Yield per acre, cwt...		137.3	136.2	132.3	...

DEMONSTRATIONS ON RECLAMATION PROJECTS.

OPEN SHEDS FOR DAIRY STOCK.

The following, quoted from Bulletin 147 of the Pennsylvania Experiment Station, is of interest in connection with the problem of housing dairy stock:

"The conclusions drawn from an experiment comparing milk cows kept in open sheds with those kept in a closed stable for a period of three years, were as follows:

During periods of very cold weather both groups decreased in production. In nearly every case the outdoor group decreased more than the indoor group but regained the normal production sooner. The temperature in the open shed rarely dropped below 0 degrees, F. The general range of temperature was from 0 degrees F. to 30 degrees or 40 degrees. The temperature in the dairy barn was kept at from 40 degrees to 50 degrees.

The experiment was continued 14 to 16 weeks during each winter. The average decrease in total weekly production per cow by all cows in the indoor groups during this experimental period was 2.63 pounds of milk, as compared with a corresponding weekly decrease per cow for the outside group of 3.50 pounds. This is a weekly difference in decrease in milk production in favor of the indoor group of .87 pound of milk per cow.

It was determined that for each therm of net energy in the feed, above what was required for body maintenance, 2.656 pounds of milk were produced by the indoor group of cows, as compared with a corresponding production of 2.443 pounds of milk in the outdoor group, a difference of .21 pound of milk per therm in favor of the indoor group.

The outdoor cows required much more bedding to keep them clean and dry but the labor of keeping the cows clean and removing the manure was much less. Under the conditions at The Pennsylvania State College the outside group required an average of 37.7 pounds sawdust or 25.2 pounds shavings per cow daily as compared with 21.7 pounds of sawdust or 8.7 pounds shavings per cow daily in the stable.

In cold weather milkers experienced some discomfort when milking in the open shed.

Cows kept in open shed have keener appetites and consume more roughage than those kept in stable.

The object of handling cows in an open shed is to decrease the cost of housing and to improve the vitality and the resistance of the animals to disease.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Open Sheds for Dairy Stock (continued).

"The calves, young stock and dry cows of the dairy herd at the Pennsylvania State College have been kept very successfully in an open shed during the past three winters.

In order to handle milk cows successfully in an open shed, the following points should be observed:

1. Shed should be tight, closed on three sides and open to the south.
2. An abundance of bedding should be used.
3. Under climatic conditions prevailing in Pennsylvania it appears necessary to have a well protected room into which to drive the cows to be cleaned and milked during cold weather.
4. Sheltered box stalls in which to house cows during time of calving are essential."

FIELD NOTES.

Shoshone.

During the week ending October 13, 39 farm visits were made and a cooperative shipment of a carload of cattle was arranged for.

A dairy barn was planned for one of the farmers, including the stall arrangement used on Hoard's dairy farm.

Potato digging started this week. The yield promises to be as good as the average. More potatoes will be stored than usual.

During the week ending October 20 a trip was made to Cody to select a registered Cotswold ram for a project farmer, and assistance was given in receiving the cattle from the Forest Reserve Range. There were only four head lost out of 179 and the cattle arrived in good condition. The owners are well pleased with this year's results.

A freeze damaged potatoes which had not been dug and some which had been dug and covered lightly.

It was impossible to get cars for shipping cattle this week, so that cars were ordered for a week ahead. The county agent reports that there are orders for about 100 cars at Cody, which is the shipping point of the large ranchers.

Boise.

Three herds of hogs were weighed in feeding tests during the week ending October 20. Mr. F. W. Mitchell, of Riverside district, had five acres of wheat stubble which he fenced at an expense of about \$20, cash and labor. The field kept 14 hogs for practically a month, making 280 pounds gain. At 15 cents a pound for pork, this paid for all expenses, with \$22 over, and the field will furnish sheep pasture till it is covered with snow. Mr. Jones has se-

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Boise (continued).

cured gains of 19 pounds per head for 29 days from green corn, fed stalk and all, on pigs weighing 64 pounds initial weight. Mr. Rindard weighed 30 head of shoats into a field of standing corn.

A man has been found for tester of the Boise Valley Cow Testing Association. With County Agent Williams, a number of members were visited to learn if they were ready to take up the work. Of those seen, two are selling their herds, one has gone to war, and two have decided to withdraw their cows from the association.

Dealers from Cache Valley, Utah, are buying cattle in the Boise Valley and have shipped 150 head to date. A great deal of this stuff is poor, but some owners are selling their best cows. These dealers are reported to have said that it was immaterial for their purposes whether a cow was any good or not if she looked like a fairly good cow.

Uncompahgre.

During the week ending October 20 a silo survey was made in co-operation with the Project Manager, one of whose men gathered the data. It was found that there had been 61 silos put up on the project since 1914, when the first one was built. Of this number, 35 are wooden silos, 4 steel, 19 cement stave, and 2 hollow tile. There was one underground silo. The area in corn to be put into the silo in 1916 amounted to 558 acres and the average yield was 9.6 tons per acre. A complete report of the survey is being prepared.

On two nights during the week the temperature was as low as 14 degrees. This has caused a heavy loss of the apple crop, which was about half picked. The loss will be felt heavily among the orchard men, as this is the first crop in two years. The chances are very poor for saving even a small percentage of the crop left on the trees.

The harvesting of potatoes and sugar beets is progressing as well as can be expected with a shortage of both labor and cars.

Some trouble is being had from poisoning of live stock on the farms. The trouble is being caused by a milkweed which grows on part of the project. The farmers are being warned against the weed.

Tieton.

Three and a half days of the week ending September 22 were spent with Mr. Farrell, visiting some of the irrigated sections of the Yakima Valley, including Moxee, Yakima Indian Reservation, Wenas, Maches, and the Tieton Project.

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FIELD NOTES.

Tieton (continued).

Eight farms were visited during the week, one call for assistance in silo building was answered, and one office conference was held.

The Washington State Fair was held at Yakima during the week. A 15-day-old cheese from the Harwood Cooperative Factory was given second place in the cheese contest, with a score of 91 per cent.

Nineteen farms were visited during the week of September 29, of which 15 were in response to calls for assistance. Two office conferences were held.

Messrs. Doane and Chaplin spent Saturday on the project, taking a general survey of dairy development and spending some time at the Harwood Cooperative Factory.

Very little alfalfa hay is selling at present. It is estimated that considerably over 50 per cent of the crop has passed from the growers' hands at from \$15 to \$20 per ton baled and loaded on cars. Most of the hay sold brought from \$17.50 to \$20 per ton. Local creameries are paying 49 and 50 cents for butter fat in cream on the farms with a ~~2~~two-cent premium for city delivery.

The local whole-milk situation is developing a rapid increase, both in price and in consumption. The Harwood factory sold two days' milk to city milkmen during Fair week at \$2.60 per cwt., and farmers are receiving \$2.20 for market milk at the farms. The increase in consumption is due to the extremely large "floating population" in the city for State Fair and for the fruit harvesting and fruit products factories operation.

TERMINATION OF APPOINTMENTS.

In connection with recent notices concerning the ante-dating of appointments, the office of the Chief Clerk asks that requests for termination of appointments be submitted as promptly as possible.

It is not, of course, always practicable to ask for terminations in advance, but in most cases requests to this office can be expedited so that we may not have to request terminations several weeks, or even months after the employee has left the service.

FIELD NOTES.

Yuma.

During the week ending October 20, the maximum temperature was 96, minimum 36.5 and greatest daily range 46.5. Twenty-six acres were irrigated. A white frost occurred at several points through the valley on the night of the 18th, in a few places doing slight damage to cotton, beans and other tender plants.

The second picking of Egyptian cotton on the station was begun this week. Fields C32 to 34 were plowed and corn stalks were cut on A9.

Clearing and leveling on the lower lands on D series was resumed this week.

Mr. E. B. Brown spent two days at the farm taking notes and harvesting the test of foreign corns. Only a few varieties produced any grain at all.

During the week ending October 27, the maximum temperature was 98, minimum 40 and greatest daily range 53. Twelve acres were irrigated.

Cotton picking and leveling on D series continued. The orchard plantings were disked and new stakes made for same where missing.

Two varieties of horse beans were planted in 21 inch rows on B18. More winter garden was planted on A12-2.

During the week Messrs. T. H. Kearney and W. G. Wells visited the station and points about the project.

Huntley.

During the week ending October 27, the maximum temperature was 65, minimum 18, and precipitation .22 inch.

Weather conditions were favorable for field work during most of the week. Harvesting was completed and fall plowing is well under way.

On the project the beet harvest is nearing completion. The potato crop was damaged to some extent locally as well as in other parts of the State by frost before the crop was harvested. This damage is reported in some sections to be as high as 50 per cent of the crop. This loss has resulted in an advance in price to \$1.50 per cwt. Alfalfa hay is selling at \$15 per ton in the stack. As a result of the high price of other feeds, sugar beet tops are in good demand and are selling at \$10 per acre.

The Great Western Sugar Company has recently made an advance in price for beets in 1918 of about \$1.75 per ton over the price paid this season. The new scale sets the minimum price at \$8.375 per ton and the maximum \$10 per ton. The average price will probably be about \$9.37 per ton based on the average sugar content of beets in this section for a number of years.

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Field Notes.

Huntley (continued).

Cow Pasturing Test.- A pasture test in which one acre of mixed grass pasture carried two cows the entire season and three cows during a part of the season was completed on October 5. Two of the one-quarter acre plats in this pasture were planted in 1911, one in 1913 and one in 1916. The pasture was divided into two parts and each part pastured alternately, for periods of from one to two weeks. Each part of the pasture was irrigated seven times during the season. The pasture period extended from May 14 to October 5, during which time two cows were on the pasture continuously with the exception of eleven days when they were kept off during stormy weather. The third cow was on pasture 57 days during the first four months of the season. The total number of cow days was 325. During the season the cows produced a total of 5777 pounds of milk which contained 259.4 pounds of butter-fat. At local market prices for butter-fat which ranged from 41 cents per pound in May to 50 cents per pound in October, the butter-fat had a value of \$107.90. During the eleven days that the cows were off pasture and from September 25 to the end of the season, alfalfa hay was fed at the rate of 30 pounds per day for each cow. The value of this hay at \$15 per ton was \$9.90 so that the value of the butter-fat produced from the one acre of pasture, after deducting the value of the hay feed, was \$96. The cows in this test were grade Jerseys.

Yields of Grass Hay, Field L-III.- In 1916 a test in methods of planting pasture grasses was conducted in Field L-III on 24 quarter-acre plats. In this test three different mixtures were planted in duplicate plats by each of four following methods: (1) with nurse crop of wheat cut for hay, (2) with nurse crop of wheat cut for grain, (3) spring seeded without nurse crop, and (4) late summer seeded in grain stubble. The mixtures planted were as follows: (1) Awnless brome grass, Orchard grass, tall fescue, perennial rye-grass, Kentucky bluegrass, white clover, and alsike clover; (2) Awnless brome grass, orchard grass, tall fescue, perennial rye-grass, and Kentucky bluegrass, and (3) Orchard grass, tall fescue, Kentucky bluegrass, White clover, and alsike clover. In 1917 two crops of hay were harvested from each of these plats, the first crop on July 6 and the second crop on September 5.

Yields secured are given in the following table:

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Huntley (continued).

Plat No.	Mixture No.	Method of planting	Tons per acre.		
			First Crop	Second Crop	Total
L-III-1.....	1	1	.69	1.35	2.04
-2.....	1	2	.97	1.63	2.60
-3.....	1	3	2.53	2.04	4.57
-4.....	1	4	.33	.83	1.16
-5.....	2	1	1.08	.71	1.79
-6.....	2	2	.92	1.29	2.21
-7.....	2	3	2.71	1.59	4.30
-8.....	2	4	.20	.83	1.03
-9.....	3	1	1.21	1.26	2.46
-10.....	3	2	1.10	1.31	2.41
-11.....	3	3	2.48	1.85	4.33
-12.....	3	4	.47	1.49	1.96
-13.....	1	1	1.94	1.54	3.48
-14.....	1	2	1.14	1.63	2.78
-15.....	1	3	2.53	1.34	3.87
-16.....	1	4	.45	1.15	1.60
-17.....	2	1	1.13	1.15	2.28
-18.....	2	2	.72	.62	1.34
-19.....	2	3	1.62	.94	2.56
-20.....	2	4	.21	.39	.60
-21.....	3	1	1.01	.76	1.77
-22.....	3	2	.68	.57	1.25
-23.....	3	3	1.74	.97	2.71
-24.....	3	4	.19	.61	.80

It will be noted from this table that there was a wide difference in yield in the first crop and that the yield in each case from the plats planted without a nurse crop are much higher than on the plats planted by any of the other methods, while the yields on the plats that were planted in late summer are remarkably low. This difference was not so noticeable in the second crop although the yields from the plats without nurse crop were in most cases still somewhat higher. Considering the total yields, the plats late summer seeded were in each set of plats lower than the yields from the nurse crops plats.

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Field Notes.

Belle Fourche.

The following table summarizes the yields of oats, flax, wheat, barley and potatoes in the irrigated rotations in 1917, as reported by Mr. Mathews:

Crop	No. Plats	Yield per acre, bushels.		
		Maximum	Minimum	Mean
Oats.....	18	76.0	34.8	59.3
Flax.....	3	17.5	6.9	13.7
Wheat, Spring.....	5	36.9	15.6	24.8
Wheat, winter.....	2	23.4	13.0	18.2
Barley.....	1	....	....	35.8
Potatoes.....	13	205.0	108.0	145.4

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Tieton.

The following notes are from Mr. Bean's report for September:

The increasing prices for dairy products is gradually beginning to decrease the popularity of selling alfalfa hay at the expense of the dairy industry. A slight demand for cows is beginning to be felt and it is probable that a number of cows will be brought to the project within the next three months. This returning optimism is also manifested in a return of the demand for good bulls and foundation cows.

Eighteen new silos have been added to the project this season and two silos of last year's construction were increased in height. The few sugar beet fields will add more succulence to the dairy rations, probably by the use of pit silos improvised for this purpose.

The majority of the farmers have had sufficient irrigation water during this month to put their land into good condition again. This is especially noticeable in the alfalfa fields and the late growth there will yield good fall grazing even though the hay yield has been somewhat reduced. The weather continues without frost and is ideal for field work - a much appreciated condition with the difficulty in obtaining satisfactory farm help.

Although no definite count has been made, the number of potato storage houses has been considerably increased, many farmers building substantial structures. This increase will undoubtedly continue during October for many growers are in no great haste to sell their crop. Three new apple storage and packing houses, privately owned, have been built on the project this fall. The Northern Pacific is extending the line from Cowichee to Tieton City in the northern part of the project and the Yakima Transportation Company is extending the electric line from Harwood to the "Henry Ranch" in the southern part. Both extensions are mainly for the purpose of moving the fruit crop from the apple orchards which are just now coming into heavy bearing.

Shoshone.

During the week ending October 27, 31 farm visits were made and a cooperative shipment of 2 cars containing 59 head of cattle was made to Omaha. Arrangements are being made for another shipment in the near future.

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Field Notes.

Shoshone (continued).

An order was received for 3 more grade Holstein heifer calves to be expressed from Wisconsin. All of the calves received so far are doing well except two, which have the scours. One of these had not been taught to drink from the bucket before shipment and it became very weak before it learned to drink.

Uncompahgre.

A part of the week ending October 27 has been spent in assisting local men in locating a supply of feeder cattle. So far, 300 head have been found which will no doubt be enough to supply the demand. There have also been requests from several sources regarding the matter of selecting dairy cows from a herd sold at auction on Saturday. The prices paid ranged from \$85 to \$138 per head. This herd was brought in from Silverton, Colorado, a few weeks ago.

With a few days of warm weather the apple prospects have looked more favorable. However there has been a heavy loss as a result of the frost last week. The Ben Davis seems to have been but slightly damaged. Some of the onions lifted before the frost and not picked up were lost. In some cases this was the entire crop.

The farmers having hogs ready for market have been alarmed on account of the drop in price, the Denver market being 4 cents lower than ten days ago. There seems to be a tendency for the market to advance at present, however.

A report has just been received in the valley to the effect that the Ogden Packing Plant will establish a market at Grand Junction. This would assist greatly with the marketing of hogs from the project.

The local creamery management has made arrangements to move the plant to the main part of town. It is thought that this will assist in the local trade of both butter and buttermilk.

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WESTERN IRRIGATION AGRICULTURE

FIELD NOTES.

Belle Fourche.

During the week ending October 27, the maximum temperature was 57, minimum 12, and precipitation .26 inch.

Husking of corn in fields A and B was started. The remainder of the week was spent in plowing, fencing, etc.

The maximum temperature during the week ending November 3 was 72, minimum 16 and precipitation T.

The principal work done was husking corn in A, B, D, F, G and P, threshing grain varieties in fields F and O, hauling corn fodder and plowing.

Yuma.

During the week ending November 3, the maximum temperature was 98, minimum 39 and greatest daily range 59. Temperature and evaporation are much reduced during the past few weeks and weekly irrigations have been smaller accordingly. Twenty-seven acres were irrigated this week.

The deciduous orchard on the B series and date orchard A18 to 21 were leveled in preparation for seeding field peas for a winter green manure crop.

Cotton picking continued throughout the week.

The second annual Yuma County fair, which was held on November 1, 2 and 3, proved to be very successful. Considerable assistance was rendered from this station in arranging and displaying exhibits.

Truckee-Carson.

During the two weeks ending November 3, 1917, the maximum temperature was 82, minimum 15 and precipitation 0.

The experiment of pasturing pigs on sweet clover and alfalfa pasture was completed October 20, when the pigs were removed from the pasture and put into pens. During the four weeks ending October 20, the pigs were given a 3 per cent. grain ration, supplementary to the pasture. One-sixth of the grain ration was tankage and the remainder rolled barley. During this period, the pigs on sweet clover pasture required 5.3 pounds of grain to produce one pound of gain, and those on alfalfa, 4.8 pounds. In a previous report, it was shown that between June 30 and September 8, where the pigs were on a 2 per cent ration, the grain required to produce a pound of gain was 2.8 pounds on sweet clover and 3.0 pounds on alfalfa.

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Field Notes.

Truckee-Carson (continued).

After removing the pigs to the pens, they were divided into two lots with the intention of giving one lot a 4 per cent ration of barley, and the other a 4 per cent ration of corn. One of the pigs, however, during the second day of the 10-day period jumped the fence, from the barley into the corn lot, and remained there until the end of the period. Because of this, the barley lot actually received a 4.6 per cent ration and the corn lot a 3.5 per cent ration. As in the pasture experiments, 1/6 of the total grain ration consisted of tannage. At the end of the 10 days, the pigs were weighed and gains calculated. The barley lot made a daily gain of 1.45 per cent and the corn lot 1.38 per cent. The grain required to produce a pound of gain was 3.0 pounds in the barley lot and 2.4 pounds in the corn lot. It is unfortunate that for this period, the results are not comparable because of the different percentages of grain fed.

Rows of Burbank potatoes were planted in the spring at weekly intervals in order to secure data on the best time for planting. The first row, which was planted April 19, was frosted to the ground after emerging; the second row, planted April 26, was slightly frosted, and the remaining four rows were not frosted at any time. The earliest and latest plantings were the least productive. The highest yield was obtained from the row planted May 3. The rows were each 365 feet in length. The yields obtained were as follows:

<u>Date of planting.</u>	<u>Yield.</u>
April 19.....	308
" 26.....	362
May 3.....	405
" 10.....	315
" 17.....	371
" 24.....	263

Fifteen varieties or strains of potatoes were grown in plat H2. Owing to a lack of uniformity of soil, a comparison of the yields is of little value. It was again noted that the Burbank and similar types were much inclined to produce second growth. The smooth growing varieties were: American Wonder, Early Freeman, Irish Cobbler, Colorado Pearl, and Scotch Rose. The varieties appearing to be most desirable were: Netted Gem, American Wonder, Earliest of All, and Colorado Pearl.

Seed of seven varieties of potatoes were received from a potato grower and breeder, Mr. H. A. Hyde, of Watsonville, California. These were planted in the garden, Field A2. The results obtained are as follows:

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Field Notes.

Truckee-Carson (continued).

Variety	Pounds seed planted	Row Length	Yield per 100 ft. row, pounds
Early Prizetaker.....	10	27	193
Producer.....	10	21	110
Pride of Multnomah.....	10	24	217
American Wonder.....	10	36	206
Burbank.....	10	24	192
Scotch Rose.....	10	24	150
Snow.....	20	45	136

Fifteen varieties of field corn were planted in triplicate in plats H13, 19 and 20. The growth in plat 20 was so irregular that the results were discarded, using only those obtained from plats 18 and 20. The test as reported is therefore is duplicate. The variety called "Union" was a yellow dent of unknown origin purchased from a local store. Four rows of this variety was planted in each check so that the results given are for 8 rows instead of 2, as with the other varieties.

The varieties are placed in the following table in approximately the order of desirability:

Variety.	Average yield per acre, pounds	
	Grain.	Stover
Minnesota No. 13.....	1995	6865
Murdock.....	1945	6030
Rainbow Flint.....	1945	4330
Rustler White Dent.....	1840	5800
Union.....	1985	5440
Minnesota No. 23.....	1810	3875
Wimples Yellow Dent.....	1720	5440
Reid Yellow Dent.....	1475	9750
Clarage.....	1670	5070
North Dakota White Dent.....	1635	5500
Leaming.....	1590	7080
Surprise.....	1535	5300
Yellow Hybrid.....	1410	7140
Northwestern Dent.....	1435	3900
August 15.....	1240	2440

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FIELD NOTES.

Tieton.

Two days of the week ending October 6 were spent at Spokane investigating the prices being asked for dairy cows in that district. Twelve farms were visited in company with County Agriculturist Shinn. All sorts and kinds of cows are for sale at prices ranging from \$40 to \$85 per head. It is not possible to buy the desirable grades of Holsteins for less than \$75, although equally desirable Jerseys are for sale for much less money. Mr. Shinn had investigated the reports that many cows were being sold for beef and had found that the report was partially true but that the cows were not fit for dairy purposes.

The Spokane country dairymen are organized and are making an effort to secure a higher price for market milk to offset the increased cost of production. This movement is giving the dairymen some encouragement and is checking the number of good cows being offered for sale. Mr. Shinn is also active in a campaign to utilize forage crops that are usually wasted or considered to be of no value, such as pea hay, mustard marsh tules, and grain straw.

Several hours were spent with the managers of the Fairmont Creamery Company, the Hazelwood Company, and the Commercial Creamery Company, in discussing the dairy products marketing situation. It was learned that the northwestern creameries have just closed the greatest ice cream trade in their history. The prediction was made that the cream now released from ice cream manufacture will be a considerable check in the advancing butter market. The Hazelwood Company are shipping practically all the sweet cream for their retail trade from Caldwell, Idaho. It was the opinion of these butter dealers that from 15 to 20 times more oleo is moving this fall than last spring. While butter continues to move at the present prices there is a marked tendency for the market to be slow. This was thought to be partially due to the season, this being the time when coal, winter clothes and supplies are usually purchased and which consume the greater part of the smaller incomes.

While there is comparatively little butter in storage at this time there is also a very small margin in handling butter and consequently a tendency for jobbers and wholesalers to restrict their purchases to immediate needs. Mr. Hagen, of the Hazelwood Company, considered that the peak of the butter prices have been reached and was inclined to think that, except in limited sections under unusual circumstances, further advances would materially affect consumption and cause a reaction.

The Fairmont Creamery advises strongly against the use of substitute coagulates for rennet in the manufacture of cheese. It is their experience that many factories are making inferior cheese due to the use of packing house substitutes for the now expensive rennet. They also advise against the use of rennet-pepsin combinations but suggest that a Parke-Davis coagulate is giving satisfaction in some factories.

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Tieton (continued).

This company anticipates a fluctuating cheese market during the winter with a prospect of the average price remaining firm or advancing slightly.

The field pea crop was generally poor in Spokane county this season. This was due to extremely hot weather which blighted the first blossoms- not to the lack of moisture. This emphasizes the importance of early planting. Mr. Shinn advises planting peas at the rate of 50 pounds per acre for dry land and 75 pounds per acre on irrigated lands in his district. He prefers "solid" to "row" planting and corrugated irrigation. The Bangalia peas have given greater yields in Spokane county than have the Canadian, under both irrigated and dry land conditions. Dry land peas are most successfully grown when seeded with grain and drilled in double rows with three drills stopped up between the double rows. The success of the Spokane pea industry has been principally due to inoculation and Mr. Shinn advises strict attention to this essential.

One day of the week was spent with Mr. Hedge at Tieton in helping to re-erect a wooden hoop silo that had been insecurely anchored and was blown down by a strong wind. This is one of the first instances of a Tieton farmer having built a home made silo without assistance, and had the wind not come before the permanent anchors were in place the effort would have been wholly successfully. The silo was patterned after one constructed last season from plans furnished by this office.

The Yakima County Holstein Breeders' sale was held at the State Fair grounds this week. About 125 pure bred males and females were sold at an average price of \$200. The highest price secured was \$575 and many desirable heifers sold under \$200. Two cows were purchased by Tieton Farmers at \$185 and \$160. One cow dropped a heifer calf two days after the sale and the other cow was bought with the privilege of breeding to a bull for which the usual service fee is \$50. These cows are to be used as foundations in two herds.

Minidoka.

The second band of sheep in the cooperative association arrived home during the week ending October 20. These had been taken from the first band at Bellevue on September 22 and held on the sage brush range of the Public Domain. The feed was plentiful but the water was scarce. This band consisted only of ewes as the lambs had been shipped from Ketchum. They were in fair shape. They were divided on Friday and put into the pastures on Saturday.

On Saturday, 13 hogs were sold out of the demonstration field of peas on the Wysong farm. These had gained 1275 pounds in 45 days

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Field Notes.

Minādoka, (continued).

and were sold at \$15.25 a hundred. The feed is still plentiful so that the demonstration is being continued with the 25 shotes.

The weather of the week was severe. On Wednesday night, the temperature dropped to 13 degrees above zero. A small percentage of the potato crop in the ground was injured and much fruit was frozen on the trees. There are many complaints of the shortage of labor, yet the shortage is due to the demands for large crews to harvest the beets and potatoes as work could not be promised extra laborers after this is completed.

Practically all the range sheep desired by the farmers for winter feeding were located during the week ending October 27. The prices paid have been \$14 per head for the good, unbred ewes and from \$14.50 to \$16 for the bred ewes. Prices that had been reported and first asked were \$15 to \$16 for the unbred and \$17.50 to \$18 for the bred ewes. The explanation of the difference is that these prices are asked and advertised by dealers and speculators and not by the sheepmen. As a rule, the range sheepmen do not hunt the local markets but depend upon shipping to the large distributing centers. However, it has been found that they are willing to sell their stock locally, direct to the farmers.

Twenty head of good registered Holstein cows were purchased by two project dairymen during the week. These were from the Stiyer herd on the Twin Falls Tract and all high A.R.O. records. The price paid was \$5,000 for the twenty head. There is much good stock, especially dairy cattle, for sale on the Twin Falls tract. In spite of the good prices for dairy products, the attractive hay and grain prices are tending to reduce the numbers of live stock in that district.

North Platte.

During the week ending October 20, the live stock census report cards to be used in collecting data concerning live stock on the project, were prepared and delivered to the Reclamation Service officials, who will collect the data as in previous years. Data concerning swine, dairy cattle and sheep will be collected this year. It is believed that there will be a large increase shown in the number of sheep raised on farms and in the number of dairy cattle, while there will be a big decrease in the number of hogs.

One outbreak of cholera was found in a small herd of 14 shotes, and they were vaccinated. One small bunch of young dairy heifers were vaccinated for blackleg. This is the first time we have done

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Field Notes.

North Platte (continued).

any vaccination of cattle, since coming to the project. Most farmers do the work themselves.

As there has been no rain or snow for some time, the roads are getting to be next to impassible in places, especially where beets are being hauled, so travel is being done only when very necessary. Four days of the week were spent in the office.

Butter-fat is selling for 44 cents; corn \$3.75 cwt; shorts \$2.75; hay \$20.00; beet tops \$10 per acre and dried beet pulp, approximately \$26 per ton.

Monday of the week ending October 27 was spent at Casper, Wyoming, with the county agent of Natrona county, and the state agent, for the purpose of investigating the possibility of securing breeding ewes for the farmers on the project. The county visited is the largest sheep producing county in Wyoming. It is from this county that many of the sheep fed on the project and in the valley come. According to the information given out by the county agent, but very few breeding ewes are available in that county at this time, but he thinks that within the next year quite a large number will be for sale. The state agent thought that by taking the matter up with different county agents over the state there would be no trouble in locating the number that might be wanted on the project for farm flocks at any time, and he has offered to assist in locating them when they are wanted. It is thought that by taking the matter up with the county agent force in Wyoming, it will be possible to secure very desirable ewes.

The first snow of the season fell this week, which helped the roads considerably. Fall work on the farms is in very good shape, practically all potatoes are out, and a large percent of the sugar beets will be out by the last of the month.

Uncompahgre.

During the week ending November 3, 18 farms were visited and calls for service and information were received from 14 sources.

There is considerable trouble among the cattle and sheep men, with a certain milk weed that is causing losses from poisoning. In one case there was a reported loss of 50 head of sheep and in another of 5 head of cattle. The weed is found in abundance on the project and is being spread badly by the wind. There seems to be very little trouble from poisoning until the plant goes to seed. During the spring and summer the sheep feed on it without

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Field Notes.

Uncompahgre (continued).

any apparent losses. The local veterinarian is handling the cases and has been able to save several head of cows when it was promptly reported. Unless something can be done to retard the spread of the weed there is danger of much loss of farm sheep.

A report has just been received from the Agricultural College at Fort Collins to the effect that a county agent for Montrose county has been appointed. Mr. Nevius of the Dairy and Food Commissioners office is the man appointed.

Two big dairy cow sales were conducted during the week on the project. Most of the cows offered for sale are of the Jersey breed.

The matter of holding a corn show and farmers institute has been started. It is the plan to hold the show at Olathe.

One farmer was assisted in the selection and purchase of a registered Holstein heifer from Nebraska. She will be sent in by express. The animal selected is bred to a son of Rag Apple the 3th.

Butter-fat is bringing 45 cents locally. Hogs are moving slowly and the prices range around \$16.50 per cwt.

Shoshone.

The following statement of shipments and prices during the month of October is from Mr. Magruder's October report:

Shipments

Alfalfa meal, cars.....	29
Hay, baled, "	1
Sugar beets, "	105
Potatoes, "	12
Oats, "	5
Theat, "	6
Hogs, "	6
Butter from cooperative creamery, pounds.....	3600

Prices

Alfalfa in stack, per ton.....	\$15.00
Butter-fat, per pound.....	.48
Theat, per bushel.....	1.85
Oats, " "82
Barley, " "	1.05
Potatoes " "75
Hogs, per cwt,.....	15.00

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Field Notes.

Shoshone (continued).

During the week ending November 3, most of the time was given to advising farmers regarding the shipping of cattle. If the cattle are in fairly good shape and the farmer is short of feed, shipping as soon as cars can be obtained is recommended. If a man has plenty of feed he is advised to hold his cattle for a while. An effort is being made to place cattle with men who have feed. Some of the men who have beet tops are buying cattle.

Returns were received on the cooperative shipment made last week. Steers sold for \$5.50 to \$3.50; cows for \$5.50 to \$7.50; bulls for \$5.50 to \$6.25 and calves for \$5.50, per cwt.

Some time was given this week to arranging for a herd of sheep to be pastured on the Forest Reserve range next summer. Applications must be in before January 1.

WESTERN IRRIGATION AGRICULTURE.

JOURNAL OF AGRICULTURAL RESEARCH.

The Office is informed by the Chairman of the Editorial Committee of the Journal of Agricultural Research that copies of the complete Journal are sent regularly only to institutions. When a fieldman desires to secure a copy of any of the articles from the Journal (all of which are listed in the Monthly List of Publications) he should send in the titles of the articles desired, together with the dates of the Journal issues in which the articles appeared.

APPOINTMENTS.

There are being sent out to farm superintendents supplies of blank requests for appointment, the use of which is urged in all cases affecting the personnel, including appointments, terminations, resignations, changes, and promotions.

In the case of appointments it will not be necessary to fill in the "Roll", "Report in", and "Qualifications" spaces, and in ordinary cases the "Reasons and Duties" space may be ignored. Special qualifications and duties in explanation of an unusual rate of pay should, however, be included.

Requests for promotions should contain full information under "Reasons" and "Qualifications".

For terminations, revocations, and resignations only the action required, name, and reasons for leaving the service will be necessary. Resignations of statutory employees should always accompany the request, and when readily obtained resignations of lump fund employees are desirable.

When compensation from other sources is received that fact should be noted, with the amount involved.

Appointments should be requested in ample time to allow this office to make its request at least five days before the date of taking effect.

It is believed that the proper use of these forms will enable this office to supply all the information now called for by the appointing officers.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Belle Fourche.

The work of the week ending November 10 consisted of husking and hawling corn in Fields, A, B, and P, threshing grain varieties in Fields F and G, and fencing, digging ditches and plowing.

The yields of alfalfa and sugar beets in the irrigated rotation experiments are summarized below:

Crop.	Number of plats	Yields per acre, tons.		
		Maximum	Minimum	Mean
Alfalfa.....	20	4.75	0.70	2.98
Sugar beets.....	15	21.30	7.48	13.86

The above summary does not include the results secured in the new rotations.

The results obtained with sheep in Rotation 71 are summarized as follows: Two ewes and their lambs were placed on plat A-II-35 on May 24. This plat contains alfalfa, and the ewes and lambs were kept on it from May 24 to August 4, with the exception of two periods, from June 15 to 29 and July 13 to 21, a total of 21 days. The sheep were therefore on the alfalfa a total of 50 days. During this period the two ewes were practically maintained in weight and the four lambs gained 95.5 pounds from the quarter-acre plat. On August 4 the ewes and lambs were removed, and on August 18 six lambs were placed on the plat, where they were kept for 14 days, during which time they gained 44 pounds. At the close of this period, on September 4, 12 lambs, averaging 72 pounds in weight, were turned on the corn plat in this rotation, plat A-II-36. From September 4 until September 25 the lambs were kept off the alfalfa plat, but on the latter date they were again turned into it, and on October 6 they were also given access to the beet tops on the beet plat in this rotation, plat A-III-38. The experiment closed on October 16. The total gains made on the alfalfa, corn, and beet tops in this rotation amounted to 521 pounds from three-fourths of an acre. If these gains are valued at 7 cents a pound, the returns were at the rate of \$89.88 for one acre of alfalfa, one acre of corn, and one acre of beet tops. If the gains are valued at 17 cents a pound (the local market price at the close of the experiment) the returns were at the rate of \$218.28 for three acres, one acre each of alfalfa, corn, and beet tops.

Following is a summary of the results secured by hogging corn:

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Belle Fourche (continued).

On September 25, four pigs, averaging 109 pounds each, were put on a half-acre plat of corn in Rotation 69, and two weeks later two more pigs were added. On September 25, three pigs, averaging 108 pounds each, were placed on the quarter-acre corn plat in Rotation 65, and two weeks later one more pig was added. The yield of corn was estimated at 55.4 bushels per acre in Rotation 69 and 67.4 bushels per acre in Rotation 65. The total gains made in Rotation 69 during a period of 32 days amounted to 537 pounds per acre; and in Rotation 65, during a period of 25 days, the gains amounted to 682 pounds per acre. If the gains are valued at the normal price of 7 cents a pound, the hogs in Rotation 69 produced a return of 67 cents per bushel of corn, or \$37.59 per acre; and those in Rotation 65 produced a return of 70 cents per bushel of corn, or \$47.74 per acre.

San Antonio.

During the week ending October 27 the maximum temperature was 89°, minimum 38°, and greatest daily range 36°. Weather throughout the week was clear, and field work was carried on without interruption.

All fallow plats and fields were harrowed and orchards were cultivated. Cotton stalks were plowed out on those cotton plats to be seeded to oats in the rotation experiments and the plats double disked and harrowed. Oats were seeded in the pasture for grazing purposes and 1-1/2 acres of oats were seeded in field C3 to be used in the steer pasturing experiment. Plowing of field C5 was started. Soil samples were taken on the cotton plats in the rotation experiments. Diagrams showing the extent of root rot injury were made of all cotton plats in the rotation experiments.

During the week ending November 3 the maximum temperature was 83°, minimum 24°, greatest daily range 45°. The first killing frost of the season occurred on the morning of October 30, when the minimum temperature recorded was 24°. The minimum temperature recorded on the morning of October 31 was 27°. The frost was rather earlier than usual and did much damage to late forage crops and to garden and truck crops.

The principal field work done was plowing and harvesting of all forage crops which were killed by the freeze. Plowing of corn stubble on field C5 was completed. Cow peas for green manure on plats A5-11 and 15 in the rotation experiments were plowed under, and plat A5-15 was subsoiled. Portions of fields B3 and C3 were plowed preparatory to seeding oats. All forage sorghum and Sudan grass in the rotation experiments were cut. Sorghums in a variety test on field D3 were harvested. Several of the varieties had not reached

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

San Antonio (continued)

maturity. Picking of cotton in the time-of-thinning experiment on field C6 was completed.

Mr. Scofield arrived at the station on Thursday, to remain until Monday.

Scottsbluff.

The following general report has been received from Mr. Holden:

The last few days of September were very cold. On the 29th the temperature went down to zero. At this time at least one-third of the beet crop was still in the ground. Beets froze about four inches under the soil. Harvesting stopped for about four days. The weather then warmed up and has been almost like summer since. The beets that were dug the first few days following the cold spell were siloed by the Factory in a separate pile so that in case heating commenced the beets could be rushed to the Factory. After the first three or four days, however, the soil had drawn the frost out of the beets so that it was fairly safe to silo in the field. By November 10 practically all beets were out of the ground and very little damage will result from the freeze.

At the time of the heavy freeze there were still a few potatoes that were not harvested. These were practically all frozen. In some cases potatoes that were siloed in the field froze quite badly, but as a general rule the potato crop was well taken care of before the freeze.

The potato market is picking up. The Red Triumph is selling for about one-third more than the other varieties. The Triumph is being shipped to Texas for seed. Triumphs are brining \$1.50 and the other varieties about \$1.00 per bushel.

The weather still remains extremely dry. It is doubtful if it will be possible to do any crowning of alfalfa this fall unless it rains soon.

The crops of the station are all harvested except for the husking of corn. No damage was caused by the cold spell except to the mangels. They were frozen badly and being mostly above ground thawed out quickly when it turned warm. The mangels were harvested and then siloed in small piles where they were covered with soil, with the hope that they will keep until the warm weather is over. These mangels were to be used in a variety feeding test on mangels and sugar beets with both sheep and hogs. Unless it turns cold soon and remains cold it is doubtful if the mangels will keep. The highest yields were over 40 tons per acre.

Yields of sugar beets and potatoes in the irrigated rotation experiments are shown in the following table:

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Scottsbluff (continued).

Yields of sugar beets and potatoes in the irrigated rotation experiments, Scottsbluff Experiment Farm, in 1917.

B E E T S

Rotation number.	Tons per acre	Plat treatment.
23.....	18.55	Manure.
21.....	16.97	do.
31.....	15.96	do.
61.....	19.46	Manure-alfalfa.
40.....	17.74	Alfalfa.
20.....	13.03	No manure.
2.....	9.76	Continuous cropping.
18.....	11.33	No manure.
30.....	9.13	do. do.
60.....	15.31	Alfalfa.
42.....	14.55	do.
22.....	11.15	No manure.
32.....	10.82	do. do.
62.....	15.45	Alfalfa.
Maximum.....	19.46	From Rotation 61
Minimum.....	9.13	From Rotation 30
Mean.....	14.23	.....

Beets on pastured and unpastured land in field K yielded as follows:

Plat number.	Tons per acre	Treatment of alfalfa crop in 1916.
2.....	16.85	Cut for hay.
3.....	16.60	Cut for hay.
4.....	18.25	Pastured with hogs fed about 2% corn.
5.....	18.55	do. do. do. do. do. do. do.
6.....	18.94	do. do. do. do. do. do. do.
7.....	18.84	do. do. do. do. do. do. do.
8.....	18.56	do. do. do. do. do. do. do. barley
9.....	18.03	do. do. do. do. do. do. 3% corn
10.....	17.64	do. do. do. do. do. do. 1% do.
11.....	18.10	do. do. no grain.
Maximum.....	18.94	
Minimum.....	16.60	
Mean.....	17.98	

Average all beets on Field K, 16.10 tons.

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FIELD NOTES.

Scottsbluff (continued).

Yields of Potatoes from Field K, 1917.

Rotation number.	Bushels per acre	Plat treatment.
1.....	61.6	Continuous cropping.
27.....	219.06	Green manure.
25.....	181.90	Manure.
21.....	187.30	do.
26.....	122.06	No manure.
31.....	211.50	Manure.
61.....	346.50	Alfalfa.
40.....	273.40	do.
20.....	131.13	No manure.
30.....	166.60	do. do.
60.....	281.20	Alfalfa.
44.....	290.40	do.
24.....	134.13	No manure.
Maximum.....	346.50	From Rotation 61.
Minimum.....	61.60	From Rotation 1.
Mean.....	200.50	.....

PERSONAL.

Mr. Scofield returned Thursday from a month's trip of inspection in the Southwest.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

PROGRAM FOR INCREASED PORK PRODUCTION.

In a letter sent to the fieldmen on November 10, with reference to encouraging the breeding of sows for spring litters, it was stated that additional material bearing on the need for increased pork production would be furnished later by the Animal Husbandry Division. The following statement was submitted by Mr. Rommel under date of November 14:

"Memorandum for Mr. F. D. Farrell,
Bureau of Plant Industry.

"I am sending you herewith the war program of the United States Department of Agriculture for the increase of pork production in 1918. Will you please send copies to your agents as soon as possible.

"Concerning this program the attention of your agents should be called to the fact that none of their States are called upon to participate directly by being given a definite quota to furnish. However, they should be fully informed concerning the situation as it exists in the entire country and should know what the program of the Department is. Such direct application of the data therein contained should be made as local conditions warrant.

"The total increase possible from the irrigation projects will not be sufficient to affect seriously the market for pork products. Therefore, irrigation farmers should be urged to make the greatest possible increase in 1918 production. There will be two outlets for such an increase:

"First, marketing direct after suitable raising and fattening. Hogs fattened on reclamation projects should be finished at weights of not less than 200 pounds in order to furnish as much total weight as possible. Next to the cry for wheat the greatest call is for animal fats and meat. Hogs are the cheapest animal source of fats and the most fat comes from the heavy hogs. Fattening should be done with self feeders in order to save both labor and grain and to get the greatest rapidity of gains.

"Second, many sections of the Corn Belt depend on supplies of feeder hogs to market the corn crop. This practice has been growing in recent years and the demand will probably be unusually strong in 1918, on account of the very large 1917 corn crop. Irrigation farmers who do not raise sufficient grain to fatten hogs can thus find an outlet for light-weight hogs to meet this demand.

"Geo. W. Rommel,
Chief, Animal Husbandry Division."

Then follows a statement regarding the pork situation and the Department's program for increased production:

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Program for increased pork production (continued).

"The war program of the United States Department of Agriculture for the increase in pork production in 1918.

SLAUGHTER OF HOGS.

Federal Inspection—Fiscal Year ending June 30.

1916.....	40,482,000
1917.....	<u>40,210,000</u>
Decrease.....	272,000

"It is quite accurately estimated that the slaughter of hogs under Federal Inspection represents 60 per cent of the total slaughter of the United States. On this basis we therefore find the following estimate for the total slaughter of the country for the two fiscal years in question:

TOTAL SLAUGHTER—ESTIMATED.

1916.....	67,470,000
1917.....	<u>67,020,000</u>
Decrease.....	450,000

"It should be pointed out that the actual decrease in the amount of pork produced is greater than the figures would indicate. The hogs slaughtered during the fiscal year 1917 were much lighter in weight than those marketed in the previous year. Further indication of the decrease in swine production is found in the report of the Bureau of Crop Estimates of the United States Department of Agriculture for hogs on farms September 1:

HOGS ON FARMS, SEPTEMBER 1.

1916.....	65,645,000
1917.....	<u>60,218,000</u>
Decrease.....	5,427,000

"So much for the situation in regard to hog stocks. The increase in cereal production in the United States in 1917 is very much above the year 1916. The estimate of the corn crop on November 1 by the United States Department of Agriculture was 3,191,083,000 bushels; the December estimate of 1916 crop by the same authority was 2,583,241,000 bushels. The five-year average for the years 1911-1915 was 2,754,165,000 bushels. The increase of the 1917 year over that of 1916 based on the November estimate is 607,842,000 bushels. The increase in 1917 over the five-year average is 438,832,000 bushels.

"The Department of Agriculture estimates an excess of 20 per cent of the corn crop to be soft. This soft corn must be fed to live stock. However, in view of the heavy Southern crop (which is in unusually good condition) and the fact that most of the corn crop is always fed to live stock, it is a safe statement to say that there

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Program for increased pork production (continued).

will still be an abundance of corn of a marketable quality to meet the usual market demands and insure reasonable prices for corn for feeders who must purchase grain. The following brief survey of the grain increase in the country should be considered.

CEREALS.

Increase 1917 over 1916.

Corn.....	500-607	million bushels.	
Oats.....	328	do.	do.
Barley.....	20	do.	do.
Rye.....	<u>8</u>	do.	do.
	556-963	do.	do.
Wheat shortage.....	<u>300</u>		
Net.....	556-663	do.	do.

The very extensive campaign now in progress to replace as much wheat as possible with corn should be encouraged in every possible way. However, the corn production of the country is above 30 bushels per capita. The normal wheat consumption is about 5.5 bushels per capita. It is apparent that if it were possible to replace the entire wheat consumption in the United States with corn or other grains, there would still remain a very large grain surplus. If we even assume the wheat shortage to be 300,000,000 bushels and subtract the entire amount from the minimum grain increase indicated above, we should still have a net grain increase of 556,000,000 bushels as a minimum with the possibility that this amount will be over 600,000,000.

"Stocks of old corn on farms November 1 are estimated at 34,745,000 bushels (1.3 per cent of the 1916 crop), compared with 87,908,000 bushels on hand a year ago and an average for five years of 100,523,000 bushels. Charge off this shortage against the 1917 crop and we still have a huge surplus—thus:

1917 Grain Surplus minimum.....	856	million bushels	
Less assumed wheat shortage.....	<u>300</u>	do.	do.
	556		
Less difference in stocks of			
corn on farms.....	<u>53</u>	do.	do.
Net grain surplus.....	503	do.	do.
Or, less difference in holdover			
corn, 5-year average basis.....	490	do.	do.

"It should be noted that the above calculations are based on an increase of 500,000,000 bushels in the 1917 corn crop over 1916. The Government estimate for November shows an increase of over 607,000,000 bushels. This estimate is very close to the actual yield. As a matter of fact, therefore, the December estimates will probably show an

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Program for increased pork production (continued).

increase in the sereals available for feed of more than 950,000,000 bushels over 1916. The duty of American farmers to themselves and to the nation is clear. Live stock production, especially hog raising, must be increased.

"Live stock makes the corn crop marketable.— Of a normal crop 75 to 80 per cent is fed. When the crop is greatly increased above normal a still greater proportion must be fed in order to make the remainder marketable at a profit. If there should be a serious shortage of hogs in the country in 1918, there will be more corn on hand than the market can absorb. The increase in the 1917 corn crop over that of 1916 is more than 15 per cent. The demands on the country for domestic consumption and for export require an increase of 15 per cent in pork production in 1918. The corn crop increase and the pork production requirements therefore coincide in theory and must coincide in practice in order to avoid serious declines in the price of corn. The increase in cattle feeding in the Corn Belt can be depended upon largely to take care of the soft corn situation in the States which are called upon for an increase in pork production."

Here follows a statement of the quotas assigned to each of the more important swine producing States. These quotas range from a 5 per cent increase proposed for West Virginia to a 50 per cent increase for Missouri, the proposed increase in swine production for the entire country being 15 per cent. The statement then continues:

"Farmers who do not breed as many as 20 sows can readily calculate the amount of increase which they should make in order to 'do their bit'. For example, if a farmer bred 4 sows in the fall of 1916 and breeds 5 in the fall of 1917, he contributes at the rate of a 25 per cent increase. If he bred 10 sows in 1916 and breeds 11 in 1917, he shares in a 10 per cent increase. If he bred only 2 sows in 1916 and breeds 3 in 1917, he contributes exactly his quota, if he lives in Missouri (50 per cent).

"The supply of breeding sows is undoubtedly short this fall. The breeding ranks will have to be filled to a considerable extent with gilts from the feed lots. These gilts will not produce quite so large litters as mature sows may be expected to produce. Therefore, farmers using gilts should breed slightly above the prescribed quotas in order to insure the requisite increase in spring pigs.

"Attention should be given to the fact that this program has been carefully worked out according to the known requirements for 1918. If it is met in every detail, these requirements will be fulfilled. If the farmer breeders of the various States do not reach the quotas set forth for them, a more acute shortage of pork products will result than now prevails, extremely high prices for hams, bacon, and lard will prevail, and only a few 'wise ones' will benefit, the consumer suffering from extremely high prices and a shortage of necessary animal fats. On the other hand, if the pro-

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Program for increased pork production (continued).

gram is carried out, a market is provided for about one-third of the 1917 corn crop, the demands of the country for pork products can be met without strain, prices to the producer should be remunerative, and those paid by the consumer should be reasonable. The country banker will endorse a systematic business-like plan such as is here-in outlined."

FIELD NOTES.

Minidoka.

The weather continued cold during the week ending November 3. On Sunday night the temperature dropped to 9 above zero. Many potatoes were frozen in the piles, while it was estimated that fully 25 per cent of those yet in the ground were damaged.

The interest in the live stock industries is still greatest in regard to sheep than the other kinds of live stock. Calls received during the week were classified as follows: Sheep problems, 11; dairy, 8; general, 7; hog, 3; beef cattle, 2. Of these calls, 16 were in regard to feeding problems.

Uncompahgre.

A meeting was called at Olathe on Tuesday evening of the week ending November 10 for the purpose of arranging for a corn show and farmers' institute to be held in December.

A feeding test was begun on the farm of Allen Nash. There were 66 pigs entered in this test, part of which are small pigs averaging but 28 pounds, and the remainder weighing 133 pounds. Cull apples will be fed in addition to ground wheat. An effort will be made to determine the value of apples as a hog feed.

A shipment of sheep was brought in the latter part of the week from New Mexico and offered for sale at \$13 per head. An effort was made to interest local farmers in buying them for the farm sheep industry. There are a few interested, but in most cases the farmer is not in a position to handle them.

Truckee-Carson.

The local beet sugar factory resumed operations the first of the week ending November 3, after being closed down for four seasons. Harvesting and hauling of beets and the operation of the factory have taken every available man. Considerable effort is being put forth

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FIELD NOTES.

Truckee-Carson (continued).

in an endeavor to have the sugar beet by-products conserved for live stock feeding on the project. Two articles have been contributed to the local papers setting forth the feeding value of sugar beet tops, wet pulp, and molasses, as compared with other feeds available locally, and the methods of preserving the same. Many dairymen have already expressed their intention of availing themselves of this source of feed as a supplement to their alfalfa hay.

Preparations are being made for the cooperative shipment of at least two carloads of hogs at the end of this month. There are very few hogs on the project as compared with previous years and the inclination of the farmers seems to be against increasing the size of herds. The sentiment seems to be to replace hogs with sheep, the farmers feeling that they can more easily provide all necessary feed for sheep on their own farms, which is impossible with hogs, since grain is not generally grown.

One feeding experiment has been planned in which about 100 head of hogs will be fed a ration of wet beet pulp, shorts, and beet sugar molasses. This feeding test will follow closely some previous work of the Utah Experiment Station. The shorts will not be available for this experiment for a few days, so the initial weights have not yet been taken.

CROPS AND LIVE STOCK PER CAPITA IN THE UNITED STATES.

Because of the practical impossibility of visualizing numbers and quantities expressed in millions or billions, it frequently is helpful to reduce these large figures to a per capita basis. The quantities of the more important food crops produced in the United States this year and the numbers of certain classes of live stock on hand are expressed on a per capita basis in the table below. The crop production figures are from the November Crop Report and they show the estimated production for 1917, except in the case of sugar. The figures on sugar are from the 1916 Yearbook. They show the estimated production of sugar in continental United States in 1916. It will be noted that the per capita production of sugar was 24.61 pounds. In addition to this, there were imports of sugar amounting to about 56 pounds per capita. The figures on live stock are from the January Crop Report. They show the estimated number of live stock in the United States on January 1, 1917.

The reduction to a per capita basis has been based on a population of 100 millions in continental United States.

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Crops and live stock per capita in the United States (continued).

Item.	Unit	Total estimated 1917.	Per capita.
Wheat.....	Bushel	660,000,000	6.60
Corn.....	..do..	3,191,000,000	31.91
Oats.....	..do..	1,580,000,000	15.80
Barley.....	..do..	202,000,000	2.02
Rye.....	..do..	56,000,000	0.56
Buckwheat.....	..do..	16,800,000	0.17
White potatoes.....	..do..	439,700,000	4.40
Sweet potatoes.....	..do..	84,700,000	0.85
Rice.....	..do..	33,000,000	0.33
Apples.....	..do..	177,700,000	1.78
Beans (commercial crop).....	..do..	16,000,000	0.16
Sugar.....	Pounds	2,461,000,000	24.61
Milk cows.....	Head	22,768,000	0.23
Other cattle.....	..do..	40,849,000	0.41
Sheep.....	..do..	48,483,000	0.48
Swine.....	..do..	67,453,000	0.67

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WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Huntley.

During the week ending November 10, the maximum temperature was 69, minimum 26, and precipitation 0.

Weather conditions have been very favorable for field work. All the crops have been harvested and the fall plowing should be completed within the next ten days or two weeks. When the crowned alfalfa plats have been plowed again the field work on the irrigated rotations will be completed for the season.

The yields of sugar beets in fields K and L-IV for the year 1917 are given in the following table:

Yields of Sugar Beets in Fields K and L-IV.

Rotation No.	Tons per acre	Per cent sugar.	Per cent Tops.	Stand per acre	Weight of beets, ounces
2	8.47	18.6	26.4	19169	14.2
18	9.11	18.6	34.9	16240	17.9
20	9.58	19.1	30.2	19749	15.5
21	12.07	19.4	37.6	21366	17.8
22	11.32	18.8	27.9	19662	18.4
23	12.46	18.7	33.4	18241	21.8
30	6.66	18.8	27.4	18966	11.2
31	9.62	18.4	39.1	18184	16.9
32	7.11	18.4	24.7	18937	12.0
40	8.41	17.8	44.5	15399	17.5
42	5.92	17.0	43.2	20677	9.2
60	8.27	16.9	39.5	17661	14.9
61	13.00	15.2	49.8	16530	25.2
67	11.91	15.2	50.6	16327	23.3
Average 1917.....	9.56	17.9	36.4	18400	16.8
" 1916.....	11.17	15.5	35.1	23515	15.3
" 1915.....	9.58	17.7	37.2	27367	11.5
" 1914.....	11.16	17.2	35.2	27242	13.0
" 1913.....	13.08	15.6	29.8	26247	15.8
" 1912.....	10.30	....	....	29076	11.3
2a	11.94	18.2	38.6	18288	20.9
34	10.52	16.3	43.3	20736	16.2
35	10.26	15.5	47.1	17448	18.8
46	9.57	15.0	51.0	15504	19.8
64	10.31	16.1	44.8	20180	16.3
Average 1917.....	10.52	16.2	45.0	18431	18.4
" 1916.....	12.51	13.2	40.5	21962	18.3

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

San Antonio.

During the week ending November 10, the maximum temperature was 82, minimum 41 and greatest daily range 35.

The principal field work done was picking cotton and plowing. Picking cotton in the time of thinning, rate and date, and other experiments on field C6 was completed. Plowing of cotton plats in the rotation experiments was continuous throughout the week. Oats were seeded in the rotation experiments and field peas for green manure were seeded in the rotation experiments. Soil samples were taken on the plats which were seeded to oats.

Mr. O. F. Cook arrived on Saturday to visit the station. Mr. John H. Kinsler, of Austwell, Texas, visited the station on Saturday.

During the week ending November 17, the maximum temperature was 85, minimum 47 and greatest daily range 37. There was no precipitation and the oats which were planted after the last rain are showing the need for moisture.

The principal field work was picking cotton and plowing. All cotton picking was completed for the season. Plowing of all fall plowed cotton plats in the rotation experiments was completed, and except for two plats, plowing of sorghum plats was completed. Soil samples were taken on the sorghum plats and on many of the fallow plats in the rotation experiments. Fences were removed from the pastures on field D3, which were used in the steer pasturing experiment. Sorghum in the variety test on field D3 was hauled in.

Mr. O. F. Cook spent Saturday and Sunday at the station, leaving for the West early Monday morning.

Belle Fourche.

During the week ending November 17, the maximum temperature was 64, minimum 15 and precipitation 0.

Work consisted of husking corn in fields O and P; plowing and dragging in A, I, O and P, garden and grounds; digging drainage trench in forest; cleaning seed, etc.

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FIELD NOTES.

Price Relationship Between Pigs and Mature Hogs.

In most of the pig-feeding trials carried on at the Western Irrigation Agriculture field stations and by farmers in cooperation with the field men, no account has been taken of the cost of growing the pigs up to the beginning of the trial. In calculating the returns from these feeding enterprises it usually has been assumed that the animals used were worth no more per hundredweight at the beginning of the trial than at its close.

Some light is thrown on this subject by a study of the relationship between the prices of pigs and the prices of mature hogs at Chicago during the past four years. Information on this subject has been obtained from the price quotations published in the Breeder's Gazette. Quotations have been tabulated from the issues of this paper for the first and third weeks of the odd-numbered months from January, 1914, to November, 1917, inclusive. For mature hogs, the quotations on "Bulk of Sales" for the first two years and on "Bulk of Packing Kinds" for the second two years have been used. (Since January, 1916, the "Gazette" has quoted both "Bulk of Packing Kinds" and "Bulk of Other Grades", but before that time "Bulk of Sales" quotations were given.) The quotations on "Pigs, Good to Choice" have been used for pigs.

The following quotations from the issues of January 1 and January 15, 1914, will serve to illustrate the method used in the present inquiry:

Month	Day	Bulk of Sales.			Pigs, Good to Choice		
		Low	High	Mean	Low	High	Mean
January.....	1	\$ 7.85	\$ 8.05	\$ 7.95	\$ 7.10	\$ 7.65	\$ 7.37
"	15	8.05	8.25	8.15	7.25	7.85	7.55
Mean.....				\$ 8.05			\$ 7.45

Thus, \$8.05 per cwt. is taken as the January, 1914, price for mature hogs at Chicago to compare with \$7.45 per cwt. as the price of pigs the same month at the same place. The process is repeated for the remaining odd-numbered months, i.e., March, May, July, September, and November, in 1914, and for the succeeding three years. In this way, use is made of the quotations on each of the two market classes on 48 days in 24 months in 4 years. The results are shown in the following table. It should be stated that the figures are not given as average prices for the months specified. They are simply the figures which have been selected systematically for comparison of the one class of quotations with the other.

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Field Notes.

Price Relationship Between Pigs and Mature Hogs (continued).

Year.	Month.	Prices per cwt. for comparison.		
		Hogs	Pigs	Difference
1914	January	\$ 8.05	\$ 7.45	\$ 0.60
	March	8.70	8.30	0.40
	May	8.50	8.00	0.50
	July	8.50	8.45	0.05
	September	8.95	7.75	1.20
	November	7.35	5.95	1.40
1915	January	6.95	6.70	0.25
	March	6.70	6.50	0.20
	May	7.50	6.70	0.80
	July	7.30	7.15	0.15
	September	7.00	7.35	0.35*
	November	6.50	6.05	0.45
1916	January	7.05	6.65	0.40
	March	9.25	8.40	0.85
	May	9.80	8.80	1.00
	July	9.95	9.05	0.90
	September	10.60	9.15	1.45
	November	9.55	8.25	1.30
1917	January	10.45	9.40	1.05
	March	13.95	11.95	2.00
	May	15.80	13.05	2.75
	July	14.75	13.55	1.20
	September	17.25	16.15	1.10
	November	16.65	15.75	0.90
Arithmetical mean.....		\$ 9.88	\$ 9.02	\$ 0.86

* In favor of pigs.

It will be noted that in all but one instance the price per cwt. of hogs exceeded that of pigs. The exception is shown in September, 1915, when the pig quotation was 35 cents higher than the hog quotation. In the figures given the excess of the hog quotation ranges from -\$0.35 to +\$2.75. If account is taken of the 24 figures used for each class in the above table, the arithmetical mean of the hog quotations exceeds that of the pig quotations by \$0.86 per cwt. In general, the difference between the two quotations was greater when prices were high than when prices were low, but there were exceptions--F.D.F.

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Field Notes.

Federal Farm Loans in Western States.

The following table, compiled from figures published in the Official Bulletin for November 21, shows the total amounts of the Federal Farm loans applied for and the amounts of the loans closed up to the end of October in the 11 far western states:

State.	Total loans applied for	Total loans closed.
Washington.....	\$ 9,044,899	\$ 1,259,075
Oregon.....	6,340,778	882,650
California.....	14,887,389	970,200
Arizona.....	1,141,887	92,100
Utah.....	2,718,925	116,900
Idaho.....	3,718,188	549,595
Montana.....	9,660,919	1,158,270
Wyoming.....	2,295,335	134,600
New Mexico.....	3,908,273	719,700
Nevada.....	461,938	69,000
Colorado.....	6,563,242	891,700
Total.....	60,741,823	6,843,790

Tieton.

Two days of the week ending October 13 were spent at the Western Washington Experiment Station at Puyallup, Washington, attending the Washington Butter and Cheese Makers convention. Messrs. Frevert and Doane, U. S. Dairy Division, and Mr. Hobson, State Market Director, conducted discussions of the manufacturing and marketing problems of Washington butter and cheese makers. The cheese entered at the Western Washington Fair, held the preceding week, was scored during this convention and the awards made at this time. A 35 day old cheese from the Harwood cooperative factory on the project was given first place in competition with the make of some of the best factories in Western Washington.

Mr. Gibson, dairy field agent for Western Washington, stated that while many dairy herds in that section are being sold but few good cows are being turned to beef. Prices on desirable animals range from \$85 to \$125. Condensaries are paying \$2.90 per cwt. for milk. This price is curtailing the manufacture of both butter and cheese in the Puget Sound country. Several cheese makers stated that their factories are holding cheese made during the past six weeks in anticipation of a better market.

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Field Notes.

Tieton (continued).

Nineteen farms were visited during the week, seven calls for assistance were answered by farm visits and assistance was given in the selection of three cows and one bull imported to the project.

The Jones Brothers Company is installing a "fruit juice products" factory in North Yakima in the building erected some years ago for a "promoted" condensary plant. This factory will turn out from 25 to 50 tons of apple pomace daily and arrangements were made this week so that farmers may secure this dairy succulence without cost. A campaign is therefore being started to utilize this feed. Messrs. Erickson, Swanson and Meyer have agreed to "try it out" as soon as the factory begins operation.

North Platte.

A short article concerning the importation of dairy calves was published in the local papers of the valley during the week ending November 3. Calves from heavy producing Holstein cows are now being quoted at \$17 each, f.o.b., Wisconsin points. The price is somewhat lower than it was a few weeks ago due to a slump in the price of veal.

Some time was given to locating breeding hogs for farmers who are in the market for them. One breeder of pure bred Duroc-Jersey hogs is selling spring boars at \$60 each. Others are holding them at \$40 and \$45 each. Poland China boars are selling around \$50 each.

Pigs were weighed up for some of the pig club boys as the work for the season was brought to a close the last of October. As a whole the pig club boys have done good work this year, though there were not as many completed the work as should. Prizes will be given in the pig club work in this valley as usual.

During the week ending November 10, the first order for dairy calves to be shipped from Wisconsin was sent out from this valley through this office. If the shipment proves satisfactory the farmer sending this order will order more later. He bought some dairy cattle that had been shipped in about one year ago, but is not well pleased with them so decided to try the calf proposition, which has been given some publicity through this office during the past few weeks.

A total of 5 herds were vaccinated with the double treatment this week. The 5 herds represented 141 head of hogs. The following comparative statement of cholera outbreaks shows the number of

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Field Notes.

North Platte (continued).

outbreaks reported during September and October in each of the past four years:

Months	Year	Number of outbreaks
September and October.....	1914	52
" " "	1915	7
" " "	1916	44
" " "	1917	3

An inquiry concerning stock hogs was received from Iowa during the week, but we were not able to give any information as to where they could be bought as none are for sale on this project at this time.

Minidoka.

For the first time since October 10, there was a surplus of labor on the project during the week ending November 10.

Although most of the hay is held at \$15 a ton, there are many thousand tons yet unsold. Range sheepmen are planning on feeding more grain than ever before. A number are also planning on lambing on the range in May rather than in sheds during February and March. By this method they expect to feed hay only three months.

The Reclamation Service estimates the production on the project to be 149,000 tons of hay this year which is an increase of 24,000 tons over last year.

Forty dairy cows from the Twin Falls tract were sold at auction in Burley on Saturday afternoon. The demand was good and the bidding brisk. Prices ranged from \$50 to \$91. Considering the quality of the stock, these prices were high.

Truckee-Carson.

During the week ending November 17, twenty calls for assistance were received and ten farm visits were made.

Considerable time is being devoted to preparation for the cooperative marketing of hogs. It is expected that at least two cars of hogs now on feed will be marketed cooperatively by the end of the month. There is a considerable number of young dairy steers

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Field Notes.

Truckee-Carson (continued).

and fat dry cows that the farmers would like to sell with apparently a very slow market. Unless a buyer can be induced to come into this territory and buy up this class of stuff, it will no doubt be shipped out cooperatively.

Considerable time has been given in arousing the interest of dairymen in the feeding of sugar beet pulp. Several dairymen have made arrangements to store this pulp in pits. Two articles have been contributed to the local papers on the relative value of sugar beet pulp and the methods of handling and feeding it.

The local herd testing association, which finished its years' work November 1, has not yet been able to perfect its reorganization. This may be attributed to the fact that a large number of the previous members feel that they have sufficient information regarding their herds as a result of the last years' test, to enable them to eliminate undersirable animals. The apathy on the part of several of the members toward dairying at the present time is very largely responsible for the lack of reorganization. The testing work, however, will be carried out with several herds by a plan which has not been altogether perfected.

The local price for hay on November 19 was \$15 per ton in stack. Butterfat at the local creamery is worth 42 cents. Good fat cows are selling to the local butchers for 7 cents on foot. Potatoes have been selling locally for \$40 per ton with a tendency for lower prices to prevail.

Uncompahgre.

The greater part of the week ending November 17 was spent assisting farmers in the way of purchasing sheep. There was an importation from New Mexico of fairly good quality, brought in a week or more ago. There were 2900 old ewes with good mouths and 700 head of young ewes. They were offered for sale in any number at \$10.50 per head, with the privilege of a 10 per cent cut. There were several farmers interested in the purchase of a few for farm conditions. The sheep, of course, are very much smaller than those raised locally and were not looked on with favor by most of the farmers interested. One man made a purchase of 500 head.

Another herd of dairy cows was sold at auction during the week. The cows were of fairly good quality and brought high prices. Many cows in the herd sold around \$150 per head. They were sold mostly to local farmers.

The newly appointed county agent for Montrose County arrived the latter part of the week. He was accompanied by Mr. Lovet, the

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Field Notes.

Uncompahgre, (continued).

State County Agent leader. A part of one day was spent in conferring with these men regarding the work on the project. A part of one day was spent with the County Agent of Delta County in connection with sheep problems.

On Wednesday a sale of sheep was attended in which a small number of old-mouth ewes were offered for sale. They were divided into pens and offered in ten and twenty lots. There was a very small number of men present at the sale and none that were interested in that class of stuff. One or two pens were sold at \$3.75 and \$4. The owner called the sale off. It was reported that quite a number of these old ewes were strays.

QUARTERS IN WASHINGTON.

Field men coming in to Washington for the winter, and especially those contemplating bringing their families with them, should when practicable make some effort to secure living accommodations in advance. Owing to the great increase in the city's population, due to war conditions, it is now practically impossible to secure apartments, and furnished rooms are exceedingly scarce and at a premium. The office will be glad to endeavor to secure quarters in advance for any of the field men, if they will designate what is desired.

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FIELD NOTES.

Yuma.

During the week ending November 10, the maximum temperature was 91, minimum 37 and greatest daily range 47. Thirteen acres were irrigated.

The deciduous orchard, B23 to 32, and date plantings, A18 to 21, were planted to Canadian field peas as a winter green manure crop.

A late cutting of Sudan grass hay was harvested from C26. Notes were completed and all fruit harvested from the seedling pomegranates. Most of the labor was employed at cotton picking throughout the week.

During the week ending November 17, the maximum temperature was 87, minimum 32.5 and greatest daily range 44.5.

An irrigation of 14 acres was applied on the station. With the minimum as recorded white frost occurred in many places although cotton growth was only killed in spots. Cotton is opening rapidly and picking on the station continues to occupy nearly all labor. Leveling was continued on the lower D. series.

Several hundred Mexicans were imported to the project during the week to be employed in cotton picking.

The following visitors were at the experiment farm through the week: Messrs. C. S. Scofield, O. F. Cook, and C. G. Marshal, of the Department, and Messrs. Argyle McLachlan and Arthur Palmer, president and manager respectively of the Imperial Valley Long Staple Cotton Growers Association.

Huntley.

During the week ending November 24, the maximum temperature was 70, minimum 20 and precipitation 0. Weather conditions continued favorable for field work. Breaking of the new field "N", and additional land in field "G" was completed.

The weather during October and November has been unusually favorable and beet harvest on the project was completed much earlier than usual. The siloed beets at most of the beet dumps have been loaded.

Construction work on the dairy buildings is nearing completion.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Huntley (continued).

Sugar Beet Root Louse Control Experiment.

Yields and other data obtained in the sugar beet root louse control experiment in 1917 are given in the following table:

Plat No.	Number of irrigations	Pounds per plat.	Tons per acre	% Sugar content.			Stand plants per acre.	Percent plants	
				Not infested	In-fested	Avg. field run		Total In-fested	injuriously infested
L-II-13-a	5	3099	13.94	16.5	15.6	...	17,631	12.3	1.4
15-a	5	2216	9.97	17.9	18.0	14.3	18,270	15.7	1.8
17-a	5	2589	11.65	....	....	....	17,586	7.6	0.0
19-a	5	2076	9.34	....	....	14.9	17,082	4.9	0.0
Average	5	2495	11.22	17.2	16.9	14.6	17,642	10.1	0.8
L-II-13-b	4	3035	13.65	16.3	13.8	16.0	16,488	13.6	0.7
15-b	4	2276	10.24	19.9	18.3	15.1	16,164	28.8	1.3
17-b	4	2203	9.91	17.9	18.0	13.8	15,885	24.2	1.2
19-b	4	2305	10.37	13.5	13.0	15.0	17,145	36.5	3.5
Average	4	2445	11.04	16.9	15.8	15.0	16,421	25.8	1.7
L-II-14-a	3	2734	12.30	16.6	18.3	16.2	19,476	25.4	1.7
16-a	3	2427	10.92	20.4	16.4	15.7	19,620	41.2	4.3
18-a	3	2068	9.30	18.6	18.6	16.3	18,486	46.0	1.2
20-a	3	1828	8.22	16.8	13.2	15.7	18,630	53.1	5.5
Average	3	2264	10.19	18.1	16.6	16.0	19,053	41.4	3.2
L-II-14-b	2	2328	10.47	15.7	18.4	15.0	17,676	26.6	0.7
16-b	2	2366	10.64	16.2	15.7	16.4	18,621	38.2	3.4
18-b	2	1855	8.34	18.1	17.8	15.9	17,379	40.3	4.5
20-b	2	1906	8.57	14.0	13.2	16.3	17,703	54.3	3.2
Average	2	2114	9.50	16.0	16.3	15.9	17,845	40.0	3.0
C-IV-1	5	890	4.45	20.8	15.3	20.3	14,660	22.4	3.6
-5	5	1630	8.15	21.0	20.9	20.7	18,440	15.5	0.2
Average	5	1260	6.30	20.9	18.1	20.5	16,550	19.0	1.9
C-IV-2	4	1214	6.07	20.8	19.4	22.3	14,730	48.8	1.6
-6	4	1589	7.94	20.1	21.2	21.8	15,830	34.0	1.1
Average	4	1401	7.00	20.5	20.3	22.0	15,280	41.4	1.4
C-IV-3	3	1143	5.71	19.0	19.0	20.9	16,350	45.1	2.0
-7	3	1723	8.61	20.2	19.5	20.0	17,170	41.4	5.3
-9	3	2047	10.23	20.7	19.8	21.4	.....	.....	.....
Average	3	1638	8.18	20.0	19.4	20.8	16,760	43.3	3.7
C-IV-4	2	1114	5.57	20.0	18.8	20.6	17,740	67.2	4.6
-8	2	1805	9.02	20.7	19.1	19.8	.....	.....	.....
Average	2	1480	7.30	20.4	19.0	20.2	17,740	67.2	4.6

WESTERN IRRIGATION AGRICULTURE
Field Notes

Huntley (continued).

The amount of infestation on any of the plats was unusually light and yield differences were not great in any case, although there appeared to be a consistent increase in yield and decrease in amount of infestation in the beets in field L, as the number of irrigations was increased. In field C, the infestation was less on the plats receiving the greater number of irrigations, although the yields did not differ consistently. In all cases the amount of sugar in the beets appeared to be less in infested beets than those not infested.

San Antonio.

During the week ending November 24, the maximum temperature was 85, minimum 32 and greatest daily range 40. A light shower amounting to .63 inch precipitation came on the 18th, but was insufficient in amount to wet the soil appreciably.

Plowing was continued throughout the week in field C6. Plats B5-2, B5-4, and A5-6 in the rotation experiments were manured. The remainder of the cotton was hauled to the gin on Saturday for ginning and baling. Some time was spent in repairing the furnace pit in the greenhouse and in rearranging water pipes.

Truckee-Carson.

During the three weeks ending November 24, the maximum temperature was 69, minimum 16, and precipitation .31 inch.

Barley vs. Corn for Fattening Hogs.

Two lots of pigs were fed from October 20 to November 17, so as to compare the effects of corn and barley rations on growth. Those receiving barley are designated as Lot I and those receiving corn as Lot II.

The plan of the experiment was to feed a 4% grain ration during the first 10 days and increase it to 5% during the remaining feeding periods. During the first period, however, one of the pigs accidentally got into the corn lot where he remained until the close of the period, so that during this time the barley lot received a 4.6% ration and the corn lot 3.5% ration.

One-sixth of the total grain ration in each case consisted of tankage. An unlimited supply of alfalfa hay was given at all times

WESTERN IRRIGATION AGRICULTURE
Field Notes

Truckee-Carson (continued).

but this was not weighed. The corn was fed on the cob, but was calculated in the rations as shelled corn, after having found by trial that the shelled corn was 70% of the weight of the ear corn.

A summary of the results of the three periods shows that Lot I required 4.7 pounds of feed to produce a pound of gain, and Lot II required 4.0 pounds. In this experiment, therefore, corn was more economical than barley, if the price per pound is assumed to be the same.

	Oct. 20 to 30		Oct. 30 - Nov. 9		Nov. 9 to Nov. 17		Summary.	
	Lot I. Barley	Lot II. Corn	Lot I. Barley	Lot II. Corn	Lot I. Barley	Lot II. Corn	Lot I. Barley fed	Lot II. Corn fed
Number of pigs	7	10	8	9	8	9	.....	.....
Initial weight, pounds.....	869	1216	1145	1253	1243	1350	.....	.....
Final weight, pounds.....	1004	1394	1243	1350	1321	1469	.....	.....
Gain in weight, pounds.....	135	178	98	97	78	119	311	394
Daily gain, per cent.....	1.45	1.38	.83	.75	.77	1.14	.....	.....
Grain fed, pounds.....	330	350	470	530	416	448	1216	1328
Tankage fed, pounds.....	70	70	100	100	80	88	250	258
Grain per pound gain, pounds.	3.0	2.4	5.82	6.5	6.36	4.50	4.72	4.03

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Minidoka.

Test of Bum Lambs on Ditch Banks and Irrigated Pasture.

During the past summer, a test was conducted with 43 bum lambs secured from one of the large range outfits. They were mostly April lambs and all had been raised on the bottle. They were of the cross-bred breeding of the range, with the long wool blood slightly predominating.

On July 5, these lambs were purchased at \$5 per head and turned into a pasture of mixed grass and clover, containing one and one-half acres. On August 7, they were weighed and placed on a ditch bank pasture, made by fencing a lateral 6 feet wide with an enclosure 31 x 643 feet, or 0.457 acre. Deducting the area taken by the ditch (6 x 643') the amount of ditch bank pasture was 0.37 acre.

The ditch bank pasture consisted of a rank growth of blue grass, white clover, alfalfa, willows and weeds. The 43 lambs were too many for this pasture so that they were held there for a 7-day period, then on the pasture for 2 days and then on the ditch bank for 8 days, after which they were held on the pasture for the remaining time of the demonstration. The best feed during this period was on the ditch bank but as the pasture was also good, each is given credit for proportionate parts of the gain during this time. In addition to the gains on the lambs, the ditch bank was greatly benefited by being cleaned of the willows and weeds. The pasture used was sown two years ago and contains the mixture recommended by the Gooding Experiment Station.

The price of \$5 per head for the two months old lambs was considered high as in former years the price of this class of stock at this time has been from \$2.50 to \$3 per head. As the owner was not interested at the beginning, no weights were taken when the lambs were purchased.

As the pasture had been allowed to grow up, there was a rank growth on July 5 when the lambs were first turned in. With the exception of turning in four horses occasionally, the pasture had not been used previously this year.

Because of the start the one and one-half acre pasture carried the 43 head of lambs throughout July. By the first of August, it was evident that the feed was insufficient to carry the lambs so that a temporary fence was made along both sides of the ditch bank. The results secured during the season are given in tables 1 and 2.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Minidoka (continued.)

Test of Bum Lambs on Ditch Banks and Irrigated Pasture (continued).

Table 1.- Forty-three lambs on ditch bank pasture.

Date begun.....	August 7
Date ended.....	Sept. 13
Number of days on ditch bank.....	15
Number of days on pasture.....	22
Average initial weight of lambs, pounds.....	50.7
Weight of largest lamb, pounds.....	66.5
Weight of smallest lamb, pounds.....	34.5
Total initial weight, pounds.....	2178.5
Final average weight of lambs, pounds.....	56.3
Final weight of largest lamb, pounds.....	79
Final weight of smallest lamb, pounds.....	35
Final total weight, pounds.....	2420
Final total gain, pounds.....	241.5
Average gain, pounds.....	5.6
Gain of best lamb, pounds.....	12.5
Gain of poorest lamb, pounds.....	0.5
Size of ditch bank pasture, acres.....	0.37
Gain on ditch bank pasture, pounds.....	97.9
Gain per acre of ditch bank pasture, pounds.....	264.5
Value of gain per acre of ditch bank pasture(at 14¢ a lb.)...	\$37.03

Table 2.- Forty-three lambs on mixed grass pasture.

Date begun.....	July 5
Date ended.....	Sept. 13
Days off pasture.....	15
Total days on pasture.....	55
Final total weight of lambs, pounds.....	2420
Gain of lambs on ditch bank, pounds.....	97.9
Initial weight plus gain on pasture, pounds.....	2322
Value of above, at 14¢ a pound.....	\$325.08
Cost of lambs, 43 at \$5 each.....	\$215.00
Increase of value on pasture.....	\$110.08
Size of pasture, acres.....	1.5
Returns per acre of pasture for lambs.....	\$ 73.38

The results are of interest from three viewpoints:

1. The value of a pasture for lamb feeding when handled this way. Undoubtedly it would be better to have no more stock than the pasture would carry for the entire season, yet in the case of lambs, a greater amount of feed is required at the end of the season.

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Field Notes.

Minidoka (continued)

Test of Bum Lambs on Ditch Banks and Irrigated pasture(continued).

From the results secured it is estimated that this particular pasture would have carried 30 lambs all summer.

2. The value of the growth on a ditch bank. As 43 lambs were held on 0.37 acre for 15 days, this is to be regarded as harvesting the growth rather than pasturing. It demonstrates the value of temporary fencing to utilize this waste.

3. The importance of type. To demonstrate this point, separate records were kept of the best and poorest types of lambs.

The lambs were purchased by Mr. N. F. Madsen, a range sheepman and professional lamb feeder. The pastures were in the farm of Mr. C. W. Brannon. Both these men were much interested and assisted with the weighings and the keeping of records.

Most of the work of the week ending November 17 was with the swine growing industry, visiting district leaders, survey men and other swine growers and getting a view of the situation.

On the South Side, there are now only 46.3 per cent of the number of hogs kept last year and only 22.9 per cent of the number kept two years ago. While the figures for the North Side are not yet available, it is estimated that the percentage of decrease will be about the same.

Regarding the number of sows to be bred, there was some question. The movement by the Department to increase the number is timely and welcome as many of the farmers were in doubt as to what they should do. Many men interviewed had intended to cut down the number of sows bred but will now increase. Approximately 150 gilts that were being fattened were cut out for breeding purposes as a direct result of the canvass made during the week.

As a rule, the farmers were found to be quite in sympathy with the movement. Many who were entirely out of hogs promised to go back into them. Two farmers offered the planning of their farms to the Government, saying they were willing to do as told and produce that which is most needed. It is believed that the number of hogs can be doubled for next year.

An attempt was made to hold a dairy cattle sale at Rupert on Saturday afternoon. These cows, like the ones sold at Burley the preceding Saturday, were from the Twin Falls Tract, although they were of a poorer type. North Side farmers were more discriminating, however, and refused to bid, although there were a number present to see the stock. The sale was called off. The promoters stated that to break even the cattle would have to sell at an average of \$70 which was fully \$25 above their value.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Minidoka (continued).

The first silo on the project was filled in September. It had been planned to build of concrete, but delay in getting materials resulted in the building of a stave silo. It is 12 x 20 feet, and cost \$150. The 40 tons of corn silage put up was grown on 2-1/4 acres, the yield being 17-3/4 tons per acre.

Boise.

Two days were spent during the week ending November 10 vaccinating cattle. The greater part of one day was spent in vaccinating a small bunch of hogs and the rest of the time was devoted to the cow testing association work. Since the resumption of the cow testing work, several other herds have dropped out of the association, others having suddenly decided to sell, and it begins to look as if it might not be possible to keep the association full, although several new herds have been added.

A bad case of hog cholera was found this week in the Riverside district near the Snake River. There is no other cholera, as far as known, within 15 miles of this farm and the district has never been infected with cholera, so the source of the infection in this case cannot be traced. There were only 10 head in the herd, one of which had died and another was killed for autopsy. Eight head were vaccinated, all but two of which showed high temperatures. Dr. E. F. Durham, of the Bureau of Animal Industry, who has been serving with Dr. W. A. Sullivan at Twin Falls in hog cholera control work has been assigned to the four counties of Canyon, Ada, Payette and Gem with headquarters at Caldwell.

One day of the week ending November 17 was spent in vaccinating cattle for blackleg and four days given mostly to the cow testing association work. It has become evident that the testing association cannot be kept up from the fact that herds are selling faster than their places can be filled and it has been deemed best by the directors of the association that the work be discontinued for the present. Conditions with respect to the dairy industry have never been more unsettled than at the present time, due to an extreme scarcity and the high price of labor and the high cost of feed with a relatively lower price for dairy products. In addition to these factors there is an almost unusual complaint that dairy cows are not producing nearly up to normal which makes a good many men reluctant to submit their cows to test. The cause for this condition is probably found in the fact that feed was very short during the past spring and that many herds were barely maintained, in many cases on inferior feed.

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Field Notes.

Boise (continued).

On Thursday a trip was made to Mountain Home to inspect a herd of cattle which had been advertised for sale. It was found, however, that the cattle were not of the grade that had been reported and that they were badly infected with abortion.

North Platte.

The second order for dairy calves to be shipped from Wisconsin was sent out during the week ending November 17 through this office. Additional farmers have expressed themselves as desirous of securing some of these calves if the first order proves satisfactory.

On Friday an order consisting of 30 pure bred Duroc-Jersey and Poland China hogs was shipped to Cheyenne county through this office. The order consisted of both last spring's and this fall's pigs.

Two days were spent with a representative from the State University on the project, who is doing livestock extension work, with special reference to pig club work.

On Saturday, another case of necrotic enteritis was found in a bunch of pigs in the vicinity of Minatare. In some of these cases the feeding of commercial stock foods seems to have a beneficial effect. However, this office is not able to give an absolutely satisfactory treatment for the trouble.

Sugar beets are practically all out of the fields by now. Potatoes are being loaded as fast as cars can be secured. As a rule, they are selling around \$1 per bushel. Butter-fat is 42 cents; corn, \$3.50 per cwt. and shorts, \$2.60 per cwt.

The third order for Holstein calves from Wisconsin was sent out from the project during the week ending November 24.

During the week a report was received on a hog feeding test conducted in August and September. The 75 head of hogs were fed corn and ground barley in a self-feeder in dry lot for 31 days when they were sold as fat hogs, bringing \$19.80 per cwt. on the Denver market. They made an average daily gain of 2.11 pounds and required 5 pounds of the mixed grain per pound gain. Valuing corn at \$4.10 per cwt. the price actually paid for it, the hogs paid \$3.65 per cwt. for the ground barley. Or valuing corn at \$4.10 per cwt and ground barley at \$2.70 per cwt. it cost \$15.83 per cwt. gain.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Uncompahgre.

Farm visits to 12 farms were made during the week ending November 24 and calls were received from 12 sources. Two meetings were attended at Olathe, one in connection with the arrangements for the corn show and farmers' institute.

There have been several large shipments of cattle to market during the week. Among those going out were a number of very fine heifers. The cattle men are selling close this year as the price of hay is high and it is nearly impossible to get the farmers to set a price on hay. There is still considerable hay unsold. The weather has been ideal for the cattlemen thus far this fall so that none have had to feed. It is thought that none will be fed until the first of the year.

One of the local cattlemen, a breeder of high grade Shorthorn cattle, sent out three carloads of feeder steers to enter in the International Stock Show at Chicago.

The demand for sheep is strong among the larger sheep men. Some of the older men in the business are selling out at high prices. One band was recently sold at \$20 and included the ewe lambs. Several small bunches have sold as high as \$25 per head. These prices are paid for the larger ewes.

There has been considerable demand for feeder hogs within the last few days. They are wanted to put in the orchards to take care of the apples left on the trees on account of freeze.

Considerable loss to the cattle men are being experienced on account of the lack of cars to handle the stock that is ready for market. Some have been holding their cattle on the farms for two weeks and feeding \$15 hay waiting for cars to move the stock.

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WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Belle Fourche.

During the week ending December 1, the maximum temperature was 55, minimum 10, and precipitation 0.

Work consisted of plowing, leveling and ditching in field K, hauling manure to field Q, making tile ditch in Forest, hauling corn fodder from field G, filling pond for stock water, etc.

PURCHASES IN FIELD.

The following is a memorandum for heads of offices under date of November 14, signed by the Acting Chief of Bureau:

"My attention has been called to the fact that purchases of bicycles, suit cases, and similar articles have been made in the field under letters of authorization without special authority. Hereafter bicycles, suit cases, trunks, fountain pens, and such other articles, usually purchased for the personal use of a traveler should not be purchased without special authority. Hereafter, such purchases should be approved by the Chief of Bureau prior to incurring liability, and expense accounts bearing such items must be supported by telegrams or letters showing the proper authority."

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Dairy Conditions on Eight Reclamation Projects on November 17.

In order to secure a statement of dairy conditions on several of the Reclamation projects, the following series of questions was sent to eight field men early in November, with the request that their replies be made as of November 17:

1. Local prices: hay in stack, \$_____ per ton; butter-fat, per pound _____ cents in cream; _____ cents in whole milk.
2. Is the local demand for cream strong, moderate or weak? _____
(b) Is the supply of cream for local factories ample or short? _____
(c) Is it increasing, decreasing, or stationary? _____
3. (a) Is the supply of milk for cheese making ample or short? _____
(b) Is it increasing, decreasing, or stationary? _____
4. Is the supply of dairy feeds excessive, ample, or short? _____
5. Are dairy herds being sold or offered for sale to an unusual extent this fall? _____
(b) If so, are they leaving the project? _____
(c) Where are they going? _____
6. (a) Are dairymen selling individual cows to an unusual extent this fall? _____
(b) If so, who is buying these cows? _____
(c) For what purpose are they being bought? _____
(d) Generally speaking, are these cows good, medium, or poor, as dairy cows? _____
7. Is there a surplus of good dairy stock for sale? _____
8. (a) Is there a local demand for dairy stock? _____
(b) If so, is the demand for high class stuff? _____
(c) Have there been any importations of dairy stock to the project this fall? _____
(d) If so, approximately how many head? _____
(e) Where did they come from? _____
(f) Are there plans to bring in dairy stock in the near future? _____
When? _____ Approximately how many head? _____
9. Briefly state whether the dairy industry on the project at present is declining, increasing, or remaining about stationary; and enumerate the factors in the situation at present influencing plans for future operations, such as labor supply, wages, feed prices and values of dairy products in relation to those of other commodities.

The replies furnished interesting information and some opportunity to make comparisons of conditions affecting the dairy industry on these eight projects on November 17. The eight projects are located in seven states. The replies made by the field men are necessarily of a general nature. With the exception of the price figures, which are exact, they indicate existing tendencies without discussing special cases. The

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DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Dairy Conditions on Eight Reclamation Projects on November 17 (continued).

replies are summarized in the table below. Space limitations necessitates some abbreviation, but this can be understood through consulting the list of questions given above.

Project	North Platte	Sho- shone	Uncom- pahgre	Hunt- ley	Mini- doka	Boise	Tieton	Truckee- Carson
State	Nebr. Wyo.	Wyo.	Colo.	Mont.	Idaho	Idaho	Wash.	Nevada
Prices of:.								
Hay in stack.....	\$21.	\$15.	\$13.	\$15.	\$15.	\$15.	\$17.	\$15.
Butterfat in cream	0.42	0.43	0.45	0.50	0.48	0.48	0.52	0.42
Butterfat in milk.	....	....	0.50	0.65	0.48	0.51	0.57	....
Demand for cream...	Moder- ate	Strong	Strong	Strong	Moder- ate	Strong	Strong	Strong
Supply of cream....	Short	Short	Ample	Short	Moder- ate	Fairly Ample	Short	Short
Do	Decr'g	Decr'g	Incr'g	Sta'y	Sta'y	Decr'g	Incr'g	Sta'y
Supply of milk for cheese factories..	....	....	Short	Short	lAmple	Fairly	Short	....
Do	....	....	Decr'g	Star'y	Star'y	Decr'g	Incr'g	....
Supply of feeds....	Ample	Ample	Ample	Ample	Ample	Ample	Ample	Ample
Unusual number of herds for sale....	No	No	Yes	No	No	Yes	No	Yes
Herds sold leaving project.....	....	....	No	....	....	Few	....	No
Unusual number of cows for sale....	No	No	No	No	Yes	Yes	Yes	Yes
Quality of these cows.....	....	....	....	....	Poor	Medium & Poor	Medium & Poor	Poor
Purchased for.....	....	....	....	....	Meat	Meat	Meat	Meat
Surplus of good dairy stock.....	No	No	No	No	No	Small	No	No
Demand for dairy stock	Yes	Light	Yes	Light	Light	No	Yes	Light
Is the demand for high class stock..	Yes	Yes	Yes	Yes	Yes	....	Yes	Yes
Recent importations heads.....	25	11	50	None	123	None	50	None
Imported from.....	Mo.	Wisc.	Colo.	....	Idaho	....	Wash.	....
Further importa- tions planned.....	Yes	No	Yes	No	No	No	Yes	No

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.Dairy Conditions on Eight Reclamation Projects on November 17 (continued)

The prices of hay are shown by the above figures to have varied from \$13 a ton, on the Uncompahgre, to \$21 a ton, on the North Platte. The prices for butterfat in cream ranged from 42 cents, on the North Platte and Truckee-Carson, to 52 cents on the Tieton. These price variations do not appear to have been associated with the prices of hay. The prices for butterfat in milk (for cheese manufacture) ranged from 48 to 65 cents, the latter price being offered by the cooperative cheese factory on the Huntley project, where it was far out of proportion to the price offered for butterfat in cream.

Generally speaking, the supply of cream was not excessive, and it was either decreasing or stationary, except in two instances. The supply of milk for cheese factories was short except at one factory on the Minidoka, and on the Boise where it was fairly ample. The supply of feed for dairy stock was ample on all eight projects. An unusual tendency to sell herds was reported from the Uncompahgre and Truckee-Carson, where, however, the sales were in effect transfers from one farm to another, and from the Boise, where a few herds were leaving the project. Sales of individual cows were confined to low class stock, which generally were sold for beef. There was no considerable surplus of good dairy stock for sale, and there was some demand for good stock on all projects but the Boise. Importations during the autumn have been light, and there are few plans for importations in the near future.

The following comments on dairy conditions were submitted by the field men:

North Platte.- The indications are that there will be an increase in the dairy industry on the project during the next few months. Recently there has been a decided increase in the number of dairy cattle kept, but because of high prices of feeds there has not been much increase in the production of butter-fat.

Shoshone.- The dairy industry is declining, due partly to the fact that other products are increasing in price faster than dairy products. A few good cows have been sold to farmers off the project but most of the animals sold have been culls. There is some tendency for farmers to sell culls and buy better animals. The expenses of the cooperative creamery have increased because of an increased number of patrons furnishing smaller quantities of cream.

Uncompahgre.- The dairy industry on the project is increasing and this is due in part to the good prices for dairy products. Labor is a problem that somewhat limits advancement, not so much because labor generally is scarce but because it is difficult to get satisfactory dairy labor. While the prices of dairy products

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Field Notes.

Dairy Conditions on Eight Reclamation Projects on November 17 (continued).

are somewhat low, as compared with prices for other commodities, farmers are coming to realize the value of dairying in relation to the production of farm crops.

Huntley.- The dairy industry remains about stationary. Some farmers feel that prices of dairy products are not keeping pace with prices for other commodities.

Minidoka.- The dairy markets are a little less satisfactory than those of some adjoining districts. The average number of cows per farm is decreasing, but the increased number of farms carrying cows maintains the total number of dairy cows. The tendency to unload dairy stock is much less marked than it was last spring.

Boise.- Dairy conditions are more unsettled than ever before and the industry is declining. The principal factors are the price of feed and labor, the shortage of labor, inferior cows, and relatively low prices of dairy products. A milk condensary at Nampa seems assured and the Boise Cooperative Creamery Company is contemplating the establishment of another. The effect of these plants would be to stimulate the industry, at least for a time.

Tieton.- The small size of farm units and of dairy herds operates against serious fluctuations in the dairy industry. The industry generally is increasing slightly, particularly in efficiency. The present prices are favorable. Labor problems are not serious, as but few herds are sufficiently large to require hired labor. The increase in the number of stock is chiefly in the 2-to 5-cow herds. There is a satisfactory demand for pure bred cows and bulls and a gratifying appreciation of the value of silage in economical production.

Truckee-Carson.- The dairy industry is about stationary, with a tendency to decrease, due largely to a strong demand and high prices for alfalfa hay. The poor quality of many dairy animals is a strong factor tending to decrease the cow population, and a strong demand and high prices for all farm crops has made dairying less necessary and less attractive for beginners who have not become well established with profitable herds. Owners of well-bred and well-selected animals show little tendency to leave the dairy business. There seems to be little chance of establishing new herds under present conditions, particularly as regards the scarcity of labor and high prices of feed. The demand for butter-fat locally is very strong.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Shoshone.

During the week ending November 10, arrangements were made for a cooperative shipment of cattle as soon as cars can be obtained. The car shortage is very great.

A trip was made to Billings to investigate the possibilities of marketing the project live stock there. An attempt is being made to organize a market there and the trip was made to investigate the progress that they are making. At present there are four firms that butcher for the Billings meat Markets. As far as could be learned they ship very little meat out of Billings. One of these firms has been reorganized and is building a large packing house with complete equipment. This firm, the Yellowstone Packing Co., expect to have its new buildings complete by the first of the year and then will be in the market for much of the stock that might be shipped to Billings. A new stock yards company has also been organized and has bought the yards which Clay Robinson & Company had been maintaining in Billings. A stock exchange has been organized and several commission firms will do business through it at the stock yards. The manager of the stock yards suggests that the shipper consign to one of the commission men who will make the packing houses and speculators compete for all cattle. It seems likely that for awhile the small packing plants will handle so little stock that they would not provide much competition for the Yellowstone Packing Company and that for awhile it would be best to make this packing company compete with the Omaha market. The plan of the project shippers now is to bill to Omaha and let the Billings packing houses bid on the cattle when they are fed in Billings. If they offer satisfactory bids the cattle can be sold in Billings and the freight from Powell to Billings will be charged. The manager of the Yellowstone Packing Company said they would bid at any time when they were notified a short time in advance.

The week ending November 24 was spent on a trip to the Omaha market with a cooperative shipment of a car of cattle.

The train left Powell at 11:00 A.M. November 17 and arrived at the Billings feed yards about 8:00 A.M. November 18. After the cattle were fed and watered properly two commission men were asked to estimate the value of individual animals on the Billings market and an appointment was made with the Yellowstone Packing Company to look over the cattle at 2:30 in the afternoon. At that time he priced each animal and after he left they were weighed. The car left Billings at 8:00 P.M. on a train that was all through freight, mostly fruit and potatoes. It was planned to feed in Alliance, Nebraska, but as the train had only reached Sheridan at 10:00 A.M., November 19, they refused to take the stock on to

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Field Notes.

Shoshone (continued).

Alliance for fear they could not make it in the limit and the stock were fed in Sheridan. From here the car was carried to Omaha on a stock train.

The train arrived in Omaha at 4:00 A.M., November 22. The cattle were unloaded about 8:00 A.M. The commission men could not do much sorting because of the congestion of the yards. All pens were full and it was stated that some trains that came in after ours could not unload. A number of pens of cattle which the packers had bought the day before were not weighed out until noon that day because their yards were full. Some of the cattle in the project car were sold Thursday afternoon, the day of arrival, and some were sold Friday. Final reports on the sales were received about 4:00 P.M.

At the feed yards a load of cattle is supposed to be fed 4 bales of hay unless more is ordered. The carload from the project ate 7 or 8 bales. In some of the yards it is easier to put the hay on the ground than in the mangers, so unless the men are watched they put the hay on the ground so that the cattle trample over it. Also the cattle are not watered properly unless it is insisted upon. The trainmen have all they can do without watching to keep the cattle up so that if cattle get down they are not likely to receive attention unless someone else looks after them. The cattle shippers watched closely all the time to keep their cattle from getting down.

The average price received for the cattle in Omaha was \$7.50 per cwt., while the average price offered in Billings was \$6.25. The shrinkage between Powell and Omaha on the cattle weighed in Powell averaged 10% so that the cost of the shrinkage was 75 cents per cwt. The shrinkage between Billings and Omaha was 160 pounds or less than three-quarters of one per cent so that the estimated cost of the shrinkage from Powell to Billings was 69 cents per cwt. It was surprising that the shrinkage was so little from Billings to Omaha but it is probable that during the time the cattle were in Powell yards and enroute to Billings they got a pretty good shrink. The expenses besides shrinkage in shipping to Omaha were 67 cents per cwt. while if the cattle had been sold direct to the Yellowstone Packing Company in Billings the expenses would have been 20 cents per cwt. If the cattle had been sold in Billings there would have been a loss of 72 cents per cwt. or about \$180 on the car, as compared with the price received at Omaha.

The car contained 28 head of cattle consigned by 16 farmers.

The following statement shows the shipments from the Shoshone project during the month of November and the prevailing prices of

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Field Notes.

Shoshone (continued).

the principal agricultural products during the same period:

Shipments:

Butter from Powell Cooperative Creamery, lbs.....	6100
Alfalfa meal, cars.....	39
Beets, "	31
Hay, "	11
Potatoes, "	26
Wheat, "	11
Oats, "	5
Honey, "	1
Hogs, "	4
Sheep, "	3
Cattle, "	1

Prices:

Alfalfa in stack, per ton.....	\$17.00
Alfalfa baled, per ton.....	21.00
Wheat, per bushel.....	1.85
Barley, " "	1.15
Oats, " "	0.82
Potatoes, " "	0.75
Butterfat, per pound.....	43¢ to 46¢

Boise.

Nearly the entire week ending November 24 was spent at Portland and Oregon City and enroute to and from these places.

At Oregon City is located the woolen mills of the Oregon City Mfg. Company, to which company was consigned the wool pooled at Meridian during the past summer. The mills were visited for the purpose of securing more information regarding the best method of handling wool with the idea of establishing, if possible, better relations between the wool producers and buyers. The Oregon City Company makes woolen goods exclusively for which reason they are not interested in the finer grades. Their specialties are blankets and mackinaws, although just at present they are devoting most of their entire plant to the manufacture of army goods.

The company is interested in the wool production of the Boise Valley, especially in view of the fact that nearly all the wool produced here is of the grade which they want and because of the relatively low freight rate, and they promise to bid on any consignments which may be offered next season. During the past

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Field Notes.

Boise (continued).

season the greater part of the Boise Valley wool went to eastern markets, principally to Philadelphia and Boston, and the Oregon City Company being unable to secure sufficient wool for their needs in the Northwest are buying from the eastern markets and shipping back to their plants. In view of this fact and of the further fact that the Oregon City Company was able to make a higher bid for wool here than any other house, it seems that more of our wool should go to the nearer market.

The 1917 Pacific International Live Stock Exposition held at the Union Stock Yards at North Portland was undoubtedly one of the strongest live stock shows ever held west of the Rocky Mountains. All classes of live stock were fairly well represented and beef cattle were strong especially. In these classes Herefords and Shorthorns were the principal breeds shown, and of these two the Shorthorn classes would compare favorably with similar classes at any show in the United States.

There were 28 exhibitors of Shorthorns, all from northwestern states, Oregon, Washington, California, Idaho, and Montana being the only states represented. The numbers and quality of the exhibits of the breed were a surprise to any one who had never attended the Portland Exposition.

The Herefords were represented by only a few exhibitors, but the quality of the exhibits was practically equal to that of the Shorthorn classes. There was only one exhibitor of Aberdeen Angus, besides the Washington State College, which made a few entries.

The dairy cattle show was not large and the quality was not high.

In the swine classes the Poland Chinas and Duroc-Jerseys were quite well represented. There were a few Berkshires, Chester Whites and one herd of Hampshires. In the Poland China classes, Boise and Payette Valley exhibitors had by far the most creditable show.

Horse classes were represented by a strong Percheron show and a few Belgians, Clydesdales and Shires.

In the sheep show, Cotswold, Hampshires, Shropshires, Dorsetts, Oxfords, Southdowns, Lincolns, and Rambouillets, were represented. Of these breeds, the exhibits of Shropshires and Lincolns were nearly negligible, while there was a rather strong show of Hampshires, Oxfords and Rambouillets.

In the fat stock classes, California University had the winning entry in cattle, a very promising yearling Shorthorn steer- half brother of the 1916 Chicago International Grand Champion. Idaho University had the winning entries in the wether classes.

There were sales of pure bred stock on every day. In the Poland China sale there were 45 entries, most of which were mediocre stuff and the sale was rather slow.

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Field Notes.

Boise (continued).

Wilson Brothers, of Greenleaf, on the Boise Project, topped the sale with a very fine sow purchased in Iowa last year, which sold for \$160. She had been expected to sell for at least \$200 and Mr. Wilson felt considerably disappointed over the price received. The Shorthorn sale was one of the features of the Exposition. There were 79 entries, most of which were calves or yearlings with a very few two-year-olds and mature animals. Forty-five head of females averaged \$435, with a top of \$1,775, for a senior yearling heifer, Grand Champion of the show. A two year old heifer sold for \$1,625, a junior yearling for \$1,225, and two senior yearlings for \$1,050, and \$1,060, respectively. The bulls sold somewhat lower as a rule than the cows, the top being \$1,200, two bulls selling at the same figure. One of these came to the Boise Valley and several others of the best offerings, both male and female, came to Boise Valley farms.

Mr. Rinehart visited the Boise Project on Saturday looking for registered Holstein bulls and a registered Jersey to head herds on the Minidoka project.

Uncompahgre.

Visits were made to 8 farms during the week ending December 1, and calls were received from 17 farmers.

One day was spent with the County Agents of Montrose and Delta counties and Mr. Wakelund, who is in charge of the alfalfa weevil work in Delta county. Assistance was given these men in getting acquainted with the live stock conditions on the project.

A call was received from a farmer on Ash Mesa to look into the loss of two heifers from poison weed. The trouble was found to be due to milk weed. It is rather difficult to know how to handle the cattle on these farms as the milk weed is found in abundance.

One farmer on the project recently sent a bunch of 63 hogs to the hills where there was an abundance of acorns. They were driven 23 miles to the oaks and after 40 days had gained 2,000 pounds of pork, or 0.8 pound a day per hog.

On Saturday a sale of Holsteins was held in Montrose. The herd sold was one brought in from Wisconsin last year. It was sold on account of the owner leaving the project. The cows averaged \$117 in price. They were sold to local farmers and a few will leave the project.

The county agent in Montrose county is finding the potatoes in storage in a diseased condition. The trouble is mostly fusarium.

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Field Notes.

Truckee-Carson.

During the week ending December 1 there were received 30 calls for assistance and ten visits were made to farms in response to calls.

The work of the local Herd Testing Association was started this week. Because of the lack of a regular tester to handle the work, a new arrangement has been made whereby the testing will be done. Twelve herds have been signed up and the owners are very anxious to have the testing carried through the coming year. For the purpose of conducting the test a number of the County High School pupils will do the actual testing under the supervision of Mr. Scott, state leader in dairying and in cooperation with this office. Each student will have charge of one to three herds. This work will also be done in cooperation with the County High School, the students receiving credit toward graduation for this work. The charge for testing will be 15 cents per cow per month. Three cents of this will go to defray the expense for testing materials, and twelve cents will be paid to the student doing the testing. This plan, although not being as satisfactory as having a regular tester seems to be agreeable to all parties, and with sufficient outside supervision, will no doubt produce the desired results.

The feeding experiment at Mr. Nygren's with wet beet pulp, beet molasses and grain has been going on two weeks. There were no weights taken, however, for the first week, because only whole barley could be secured for the grain supplement. One weighing has been done on shorts, molasses and pulp. When whole barley was fed with the pulp, the barley was mixed with the wet pulp and allowed to stand for two or three days with the idea that the whole barley would be softened, and more easily digested. This plan, however, was not very satisfactory. The hogs seemed to relish the feed so much that they ate it too fast to allow for grinding the barley grains, and as a consequence most of the barley passed through whole, and the hogs appeared to make rather slow gains. Only ground feed will hereafter be used. On one occasion a mixture of sand and molasses that had collected in the bottom of the barrel was dumped where the hogs could get it and considerable trouble from impaction resulted. One hog was lost and another one required considerable treatment to bring it through. The beet molasses was originally stored in a large pit at the factory and in getting it out considerable sand got mixed into the molasses.

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 DEMONSTRATIONS ON RECLAMATION PROJECTS.
FIELD NOTES.

Minidoka.

RESULTS OF COOPERATIVE SHEEP GRAZING.

The following report of the results secured with one of the bands of sheep in the cooperative grazing association in 1917 is from Mr. Rinehart's report for the month of October:

The cooperative grazing work was undertaken for two reasons: First, to learn of the possibilities of cooperative utilization of summer grazing lands by sheep owners who do not have sufficient irrigated pasture to keep their sheep on their farms, and, second, to determine the expense of cooperative grazing. The band here reported contained 1,765 head, of which 1,094 were ewes and 671 were lambs. The band contained Rambouillets, Lincolns, Cotswolds, and Hampshires, and various mixtures of these breeds. All of the sheep were graded except 325 head of purebred long-wools. The grazing season began May 20 and ended October 5, covering a period of four and a half months. The details of the enterprise are shown in the following tables:

Flocks assembled,	May 20
Flocks disbanded,	Oct. 5
Time on range, months,	4-1/2
Number of ewes turned out,	1094
Number of lambs turned out,	671
Total sheep in band,	1765
Total sheep returned,	1581
Number lost,	184
Percentage of loss, average,	10.4
Highest loss in one flock, percent,	20.3
Lowest loss in one flock, percent,	5.2
Expense of grazing band per season,	\$1187.88
Expense of grazing one ewe per season, ..	\$ 1.085
Expense of grazing one ewe per month, ...	\$ 0.24
Expense per head of sheep returned,	\$ 0.745

The total expense of \$1187.88 was distributed as follows:

Camp supplies, including sheep salt,	\$ 247.18
Herding,	375.00
Camp tending,	163.70
Extra help, pack train over summit,	40.00
Locating strays and payment for same, ...	39.55
Damage by band to farmers,	9.00
Auto livery and railroad expenses,	25.00
Wagons and horse expenses,	60.00
Stable bills,	30.50
Purchase of water on trail,	2.75
Purchase of hay on trail,	125.00
Bridge toll,	3.00
Grazing fees,	54.70
Miscellaneous, not itemized,	12.50
Total,	\$1187.88

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Minidoka (continued).

Results of Cooperative Sheep Grazing (continued).

The above table shows the cost of handling this cooperative band from the time of assembling to the time of disbanding. The cost was somewhat greater than it would have been had the camp tender not quit at a critical period and had the necessary labor been more regular. At times only one man was with the sheep and this resulted in straying and extra expense. The losses by straying were worse in the case of the long-wools than any of the other breeds. The half-blood Hampshires herded well in comparison with the long-wools. There were some heavy losses because of the extreme old age of some of the ewes. One man also suffered severe losses because of the fact that his sheep consisted of orphan lambs from two to three months old. If these losses, and those caused by poisoned grain which had been put out to kill gophers, are eliminated, the average loss would have been about 7 per cent.

Various losses are bound to occur even in the best managed range outfits. It is believed that, considering all possibilities of loss, a band of from 1000 to 1200 head of ewes cannot be handled on the range for less than about one dollar per head for the grazing season. Experienced range men claim that at present prices the cost will equal or exceed this figure. The expense of the two cooperative bands sent out this summer, one being that reported above, indicates that it will cost from 20 to 25 cents per ewe per month to carry sheep through the summer by this method.

PASTURING EWES AND LAMBS ON A DITCH BANK.

A test of carrying ewes and lambs on a ditch bank was conducted on the farm of C. S. Phillips, in the Pioneer district, west of Rupert. The lateral runs through the eighty-acre farm, and its length is 1364 feet. The ditch is 10 feet in width.

The ditch bank was grown up to vegetation mostly, although there were some spots such as two borrow pits and other smaller patches that were bare. Conditions of the banks were typical, so that the results should represent a fair average. The vegetation consisted of bluegrass, white clover, sweet clover, a small quantity of alfalfa, a large variety of weeds and willows.

The ditch bank was fenced off and pastured. Included in the enclosure was a strip of alfalfa embracing 1.47 acres. The actual pasture area of the ditch bank and the alfalfa patch was 4.33 acres. The sheep were registered Hampshire ewes and their lambs. The lambs were large, so that they consumed as much or more than the mature ewes. This pasture had been used on alternate two weeks by a band of 40 sheep which failed to consume the growth. It was found that the pasture would carry 129 head of ewes and lambs each alternate two weeks on the 4.33 acres, equivalent to 65 ewes and lambs continuously, or an average of 15 to the acre.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Minidoka (continued).

During the week ending November 24, five days were spent with the swine growing industry and one and one-half days with the dairy industry. For the first time in four months, there was no necessary work with the sheep growing industry.

The pure bred Helstein herd of A. A. David of Filer was sold at auction on Tuesday. The stock was all young, 2-1/2 years and under. They were sold at an average of \$193, top at \$400. Two heifers and a bull calf were purchased by project farmers.

At the Stauffacher sale, held the day following the Davis sale, the demand was mostly for grade cows with high records in the cow testing association. The best grade cow brought \$310. Eleven other high grade Holsteins brought over \$200 each.

During the week ending December 1, thirty-eight inquiries regarding the problem of buying or selling sows for breeding purposes and managing them at a profit were received.

The feeding of the hogs is a serious problem. Because of the necessity of increasing the wheat yield, the acreages of barley and other feed crops were decreased. The field pea crop was much poorer than in former years. In the past, considerable wheat has been used as feed, but as it must now be shipped for food, there is a scarcity of all grain feeds. Some smutty wheat, unfit for milling purposes, is available but the price of this, ground and sacked is \$3.10 per cwt. Barley is scarce although there is some to be had at \$3.15 per cwt., ground and sacked. Definite prices and promises on good corn cannot be obtained at this time but it is expected to be about \$3.00 on the local markets. At the present time, bran and shorts, mixed, at \$2.10 per cwt. is the cheapest feed, yet there is an insufficient supply of this.

From \$14.25 to \$14.75 is being offered for stock hogs, price being dependent upon the size and quality; \$15.00 is being paid for market hogs.

Under the present circumstances, it is best for the project swine growers to ship out their stock hogs to the corn belt. The breeding stock will be carried on cull potatoes or mangels, skim milk, alfalfa hay and a small amount of bran and shorts.

Trouble is again being experienced with the taenia fimbriata or small tape worm in sheep. In one band of 500 lambs, 54 head were lost during the week ending December 8. As the lambs are all fat, they will be shipped to market as soon as cars can be secured. This band had been ranged south of Oakley last summer and fall in the same district where the worst infected sheep had been kept last year.

Field Notes.

Minidoka (continued).

Sheepmen who have had experience with this tape worm have the following three theories regarding the cause of the migration of the worms to the bile duct.

1. Due to a change from green to dry feed.
2. Caused by sheep eating frozen alfalfa plants in the pasture.
3. Stage of maturity of the parasite. The result of the investigations on the project tend to disprove the latter theory as there are usually a number of different sizes in the same duct.

The fact that there are no indications until a certain period when a large number of the sheep are affected and die in a short time, would indicate that it is some condition of the contents of the intestine that causes the migration.

Tieton.

Mr. Bean reports that the Yakima valley had 182 growing days free from frost this season - from April 19 to October 18. The period last year was 162 days - from May 11 to October 10. The longest frost free period of definite knowledge was in 1915 - March 31 to November 6, or 220 days.

A summary of the sheep sale held at the state fair in September was issued by Prof. Hyslop, Washington State College, who had the sale in charge. The 334 rams sold at an average of \$44.04. The highest price, \$300.00, was paid for a Rambouillet. Hampshires, Lincolns and Shropshires were in demand in the order named with Oxfords and Cotswolds following. Rambouillet ewes, like the rams, led other breeds in popularity, the 185 sold averaging \$36.64. Forty Hampshires averaged \$33. Grade ewes brought from \$41, for Rambouillets, to \$16. for Lincolns. Practically all the buying was by range sheep men, although a very few ewes were sold to local farmers.

During the week ending October 25, twenty-five farms were visited, nine calls for assistance were answered and 10 conferences were held.

Sheep men are paying project farmers one cent per day per head for grazing sheep over alfalfa, grain, corn and beet fields. More orchard men are renting their inter-cropped orchards for this purpose this season than has previously been the case. Several farmers have sold a part of their alfalfa at from \$15. to \$17.50 in the stack to sheep men who plan to feed the hay on the ground while grazing the bands over adjacent farms. This is practically a new practice for the Tieton.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Tieton (continued).

Potato harvest is now well under way since the frost on the 18th killed the vines. The potato movement has reached considerable significance in the Yakima Reservation with prices ranging from \$25. to \$35. per ton.

In cooperation with the county agriculturist, Mr. Price, work was begun this week upon the program for the annual farmers' course to be held in Yakima in January. The growing interest in the sheep industry will receive attention and the beef industry will likewise be given more time.

Shoshone.

During the week ending December 1, practically all of the time was spent informing farmers regarding the disposal of cattle. Other matters discussed were dairy barn construction, arrangement of lots and buildings, pasturing sheep on the Forest Range, feeding and marketing hogs and creamery management.

The weather is still excellent. Roads are good, so that farmers are hauling alfalfa hay and grain to the market. Hay is about \$17.00 per ton in the stack. Grain is being received at the new elevator. The highest price being paid for wheat is \$1.89 per bushel. Stock hogs are still being shipped to Nebraska. The last load was bought at \$15.75 per cwt.

Boise.

For the week ending December 1, Mr. Ireland reports as follows:

For some time there has been talk of the establishment of a milk condensary by the Carnation Milk Company of Seattle, at Nampa. Recently the report seems likely of confirmation. In view of the possible effect of such a plant on local factories, the Boise Cooperative Creamery Company called a meeting of its stock holders at Boise this week to discuss the feasibility of adding a condensary to their equipment to hold the field against the private company. About 200 men, mostly stockholders, were present. Sentiment was strongly in favor of a condensary and it was voted to undertake the establishment of one, probably at Meridian.

The effect of condensaries upon the dairy industry is conjectural. In view of the fact that prior to the present strong demand for condensed milk many condensaries on the coast were reported to be closed, it is feared by some that the ultimate effect upon dairying will not be beneficial. It was thought that a privately owned plant might, under present conditions, completely run out the creameries and cheese factories and then upon the return

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Field Notes.

Boise (continued).

of normal conditions, be compelled to lower the price below what creameries or cheese factories could pay. It would seem, however, that the shortage of dairy cows in Europe might be depended upon to keep up the demand and price for condensed milk for some years to come.

An effort was made during the week ending December 8 to ascertain whether or not it will be possible to secure range for a cooperative band of sheep on the Payette National Forest in 1918. The Forest Supervisor states that nothing definite can be promised at present but permits for 2400 head can probably be obtained. Five of the applicants met in this office on Saturday and agreed to call a meeting of all applicants for December 15.

Several meetings have been held this week with Mr. Musser, at which the government program regarding pork production has been discussed. Lantern slides on sheep have also been used. These meetings will be continued.

As was anticipated, in connection with any effort to increase the production of hogs, the question of feed is being raised very frequently. Due to the increased wheat acreage the past season and the use of corn for silage, there is relatively little corn, barley or oats to be had. A few farmers are feeding wheat in spite of the sentiment against the practice, although there is little profit at present prices of wheat and pork.

Uncompahgre.

During the week ending December 8, nineteen farm visits were made and calls were received from 15 sources.

The arrangements for the corn show and farmers' institute to be held at Olathe December 14 and 15 were completed. Several speakers from the outside have promised to come to lead in the discussions. Mr. Ellington of the Western Dairy office will speak on dairying.

A hog feeding test was completed during the week in which 64 pigs and shoats were fed for 30 days on ground wheat and bran and frozen apples. They gained 1609 pounds on 4551 of ground wheat, 2334 pounds of bran and 6831 pounds of frozen apples. In this case, it required 427 pounds of grain and 424 pounds of apples to produce 100 pounds of gain.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Huntley.

SUMMARY OF RESULTS WITH PIGS ON ALFALFA PASTURE IN 1917.

The investigational work with hogs at the Huntley Experiment Farm in 1917 included alfalfa pasturing and corn hogging on irrigated land, some dry lot feeding, and some pasturing and hogging tests on dry land. This work is conducted in cooperation with the Bureau of Animal Industry, by which Mr. C. V. Singleton is detailed to the work as Scientific Assistant in Animal Husbandry. The following numerical summaries of the experiments with alfalfa pastures have been compiled from reports made by Mr. Singleton and Mr. E. G. Noble. These summaries are given here as a general record of the results. No attempt is made to include all the details, nor to make any interpretations. Except where otherwise noted, the usual two-pasture method was followed.

Sows and litters.--The following table gives a general summary of the results secured with three lots of sows and spring litters on alfalfa pasture for a 56-day period beginning May 16:

Items	Lot 1 2% Barley	Lot 2 2% Corn	Lot 3 2% Corn
Area of pasture, acre,	0.25	0.25	0.25
Grain ration consumed, percent,	1.97	1.88	2.01
Number of sows,	2	2	2
Number of pigs,	13	12	10
Pasture period, days,	56	56	56
Average initial weight, sows, pounds	250	267	264
Average initial weight, pigs, pounds	11	13	7
Final weight, sows, pounds,	231	235	230
Final weight, pigs, pounds,	33	35	32
Average daily gain, pigs, pounds, ..	0.39	0.38	0.44
Gain per acre (gain of pigs less loss of sows), pounds,	988	780	702
Value of gains per acre @ 7¢,	\$69.16	\$54.60	\$49.14
Value of grain fed per acre, @ 1¢, .	24.98	26.15	26.85
Returns per acre,	\$44.18	\$28.45	\$22.29
Pounds grain per cwt. gain:			
Sows and pigs,	253	335	382
Pigs,	218	250	275

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Field Notes.

Huntley (continued).

Summary of Results with Pigs on Alfalfa Pasture in 1917 (continued).

Alfalfa pasturing in irrigated rotations.--Two of the irrigated rotations, numbers 67 and 69, include hog-pastured alfalfa. The alfalfa is supplemented with a 2 per cent ration of corn. A summary of the results obtained with hogs in these two rotations in 1917 is given below:

Items	Rotation 67			Rotation 69		
	Fall Pigs, Spring Period	Spring Pigs, Summer Period	Entire Season	Fall Pigs, Spring Period	Spring Pigs, Summer Period	Entire Season
Area of pasture, acre,	0.25	0.25	0.25	0.25	0.25	0.25
Length of period, days, ...	61	89	150	61	91	152
Grain ration consumed, per cent,	1.99	1.97	----	2.07	1.88	----
Number of pigs in lot,	4	8	----	5	8	----
Number of pigs per acre, ..	16	32	----	20	32	----
Average initial weight, lbs	127	34	----	102	39	----
Average final weight, lbs.,	198	67	----	163	78	----
Average daily gain, lbs., .	1.16	0.33	----	1.01	0.43	----
Gain per acre, lbs.,	1136	1044	2180	1232	1248	2480
Value of gains per acre @ 7¢ lb.,	\$79.52	\$73.08	152.60	\$86.24	\$87.36	\$173.60
Value of corn fed at 1¢ lb.	\$31.92	\$30.60	\$62.52	\$33.40	\$32.16	\$ 65.56
Returns per acre,	\$47.60	\$42.48	\$90.08	\$52.84	\$55.20	\$108.04
Lbs. grain per 100 lbs.gain	281	293	287	271	258	264

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WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Huntley (continued).

Summary of Results with Pigs on Alfalfa Pasture in 1917 (continued).

Varying grain rations and pasture methods.--During the spring-period of 56 days, May 16 to July 11, six lots of fall pigs were used to test various grain rations and two methods of pasturing. These lots were tested as follows:

- Lot 1, half-acre divided pasture, no grain.
- Lot 2, quarter-acre divided pasture, 1% corn.
- Lot 3, quarter-acre divided pasture, 2% corn.
- Lot 7, quarter-acre undivided pasture, 2% corn.
- Lot 4, quarter-acre divided pasture, 3% corn.
- Lot 5, quarter-acre divided pasture, corn in self-feeder.

The results with these lots of fall pigs are summarized below:

Items	Lot 1 No grain	Lot 2 1% Corn	Lot 3 2% Corn	Lot 7 2% Corn 1 Pasture	Lot 4 3% Corn	Lot 5 Corn in Self- feeder
Area of pasture, acre	0.50	0.25	0.25	0.25	0.25	0.25
Grain ration consumed, percent, ...	None	1.01	2.00	2.01	2.97	4.84
Number of pigs in lot	6	5	5	5	6	6
Number of pigs per acre,	12	20	20	20	24	24
Average initial weight, lbs., ..	77	76	81	78	78	79
Average final weight, lbs.,	104	111	124	124	134	174
Average daily gain, lbs.,	0.48	0.63	0.77	0.82	1.01	1.70
Gain per acre, lbs.,	364	692	860	920	1353	2291
Value of gains per acre @ 7¢ lb., .	\$25.48	\$48.44	\$60.20	\$64.40	\$94.71	\$180.37
Value of corn fed per acre @ 1¢ lb., .	\$ 0.00	\$10.76	\$22.96	\$23.04	\$42.32	\$ 83.88
Returns per acre, ...	\$25.48	\$37.68	\$37.24	\$41.36	\$52.39	\$ 96.49
Lbs. grain per 100 lbs. gain,	----	156	267	249	313	366

WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Huntley (continued).

Summary of Results with Pigs on Alfalfa Pasture in 1917 (continued).

The same tests were conducted during the summer period of 84 days, July 11 to October 3, with spring pigs, and one additional lot was included and fed 2% ground barley. The results obtained with these seven lots are summarized in the following table:

Items	Lot 1 No grain	Lot 2 1%Corn	Lot 3 2%Corn	Lot 7 2%Corn (1 pas ture)	Lot 4 3%Corn	Lot 5 Cornin self- feeder	Lot 6 2% Bar- ley
Area of pasture, acre, ..	0.50	0.25	0.25	0.25	0.25	0.25	0.25
Grain ration consumed, percent,	0.00	1.00	2.00	2.03	3.02	3.9+	2.03
Number of pigs in lot, ..	7	7	8	8	9	8	8
No. of pigs per acre, ...	1+	28	32	32	36	32	32
Average initial weight, lbs.,	35	34	35	34	35	35	35
Average final weight, lbs	46	49	65	63	81	111	63
Average daily gain, lbs.,	0.14	0.18	0.36	0.34	0.56	0.90	0.33
Gain per acre, lbs.,	164	432	956	926	1686	2420	888
Value of gains per acre @ 7¢ lb.,	11.48	\$30.24	\$66.92	\$64.82	118.02	169.40	\$61.16
Value of grain fed per acre @ 1¢ lb.,	0.00	\$10.08	\$27.55	\$26.99	\$52.08	\$74.86	\$26.15
Returns per acre,	11.48	\$20.16	\$39.37	\$37.83	\$65.94	\$94.54	\$35.01
Lbs. grain per 100 lbs. gain,	----	233	288	291	309	309	294

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WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Huntley (continued).

Summary of Results with Pigs on Alfalfa Pasture in 1917 (continued).

For purposes of comparison, the data in the preceding tables, showing, for fall pigs and spring pigs on alfalfa pasture, the gains per acre, the pounds of grain consumed per 100 pounds of gain, and the returns per acre, calculated on the basis of 7-cent pork and 1-cent grain, are brought together in the table below:

SUMMARY OF RESULTS WITH SPRING AND FALL PIGS ON ALFALFA PASTURE

Huntley, 1917.

May 16 to October 3 ---- 140 days.

Items	Fall Pigs Spring Period	Spring Pigs Summer Period	Entire Season
Length of period, days, ...	56	84	140
Total gain per acre, lbs.:			
No grain,	364	164	528
1% Corn,	692	432	1124
2% Corn,	860	956	1816
Do (1 Pasture).....	920	926	1846
Do (Rotation 67)...	1136	1044	2178
Do (Rotation 69)...	1232	1248	2480
3% Corn,	1353	1686	3039
Self-fed Corn,	2291	2420	4711
2% Barley,	----	888	----
Pounds of grain per cwt. gain;;			
1% Corn,	156	233	186
2% Corn,	267	288	278
Do (1 Pasture).....	249	291	270
Do (Rotation 67)...	281	293	287
Do (Rotation 69)...	271	258	264
3% Corn,	313	309	311
Self-fed Corn,	366	309	336
2% Barley,	---	294	---
Value of gains per acre, at 7¢ less cost of grain @1¢			
No grain,	\$25.	\$11.	\$36.
1% Corn,	38.	20.	58.
2% Corn,	37.	39.	76.
Do (1 Pasture).....	41.	38.	79.
Do (Rotation 67)...	48.	42.	90.
Do (Rotation 69)...	53.	55.	108.
3% Corn,	52.	66.	121.
Self-fed Corn,	96.	95.	191.
2% Barley,	----	35.	----

29 December, 1917.

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WESTERN IRRIGATION AGRICULTURE.

Field Notes.

San Antonio.

During the two weeks ending December 15, the maximum temperature was 85, minimum 15, and greatest daily range 60. There has been no precipitation in more than a month and the soil is becoming very dry. All winter crops are suffering severely from drought.

Winter oats have made no growth for some time, and are beginning to die out in places. Cold weather during the past week did much damage to garden crops, and injured somewhat field peas in the rotation plats on the station.

The principal work done on the station has been plowing and hauling manure. Plowing of fields D-3 and F-3 was completed, and plowing on field A-3 was started. Only a small amount of plowing remains to be done on the station. Plowing was stopped temporarily on account of the disagreeable weather, and the partial disability of part of the work stock, due to distemper. Manuring of rotation plats was completed. A portion of field C-4 was double disked to kill volunteer oats. Post holes were dug around the oats on field C-3 to be used in the steer pasturing experiment.

Yuma.

During the week ending November 24, the maximum temperature was 85, minimum 37, and greatest daily range, 48.

An irrigation of 27 acres was applied.

The following fields were plowed, C-6-25-26, and also the field that has been under a Bermuda grass grazing test, Al-8, was plowed. A number of varieties of field peas were planted in rows on C-36. The first picking of Upland cotton varieties on blocks D-23 and 24 was made. New lands, D-38 to 41, which were being leveled, were completed this week and made ready for seeding.

During the week ending December 1, the minimum temperature went down to 32, while the maximum registered was 82, with the greatest daily range at 46.

Only a small amount of the Egyptian cotton over the project has as yet been killed by frost. At the same time, there is much more damage done to the Upland varieties.

There was no irrigating done on the experiment farm this week.

Flax plantings were made on C-32, D-40 and 41. Borders C-33 and 34 were planted to Bangalia Canadian field peas in three foot rows to be grown as a plot variation test.

Cotton picking continued and alfalfa seed and miscellaneous grains were threshed.

About 200 photographs of the deciduous variety orchard were made.

Mr. Geo. Butterworth of the Office of Markets arrived this week to make the first classing of the Egyptian cotton crop that has been ginned to date.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Yuma (continued).

During the week ending December 8, the maximum temperature was 77.5, minimum 31.5, and greatest daily range 44.5

Fifteen acres were irrigated.

The third picking of Egyptian cotton blocks was begun and clearing was begun on lands D-34 to 37.

Canadian field peas were seeded on land B-22 of the deciduous orchard. A late cutting of alfalfa was made on most of the fields.

Messrs. O. F. Cook, C. G. Marshall and H. Loomis of the cotton office visited the station for several days during the week.

During the week ending December 15, the maximum temperature was 76, minimum 30, and greatest daily range 46.

From now until spring, water will be in the ditches only every other week.

Cotton picking and clearing were continued and the remaining alfalfa plots harvested that were not cut last week.

Grain sorghum from fields C-7, D-13 to 17, and E-3 and 4 was harvested. A broadcast planting of horse beans was made on E-9 to later be tested in hogging down.

A new variety bed of strawberries was planted on A-14-3.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Tieton.

Fourteen farms were visited during the week ending November 3, seven calls for assistance were answered, and seven office conferences were held.

Fifty-three cows sold at the Sanders auction sale at Ellensburg furnished proof for the statement that good cows are in strong demand. Five of these had udder defects and sold from \$100.00 to \$125.00. The 48 others brought from \$125.00 to \$179.00. The cows were all high grade Holsteins and the herd was widely and favorably known. Many of the animals went to the Puget Sound country into the hands of professional dairy cow dealers. The majority of the 31 heifers sold brought from \$50.00 to \$100.00. Cows of practically equal quality can be bought locally at from \$80.00 to \$100.00 and no importations were made from this sale to the Tieton.

There is an increasing interest in feeding more economical rations to cows than hay only. Several men will fill pits with beet tops or apple pomace, others will complete filling their silos with beet pulp or apple pomace and others will pit root crops. One silo is being built to ensile corn fodder mixed with pomace.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Tieton (continued).

Beginning with this week the Harwood Cooperative Cheese Factory will sell its product directly to retailers instead of shipping it to Spokane or Seattle to the jobbing trade. A salesman was found who would sell cheese as a side line for a commission of one cent per pound. The freight to Seattle plus jobber's commission is 80 cents per cwt. and to Spokane is 13 cents per cwt. more. Thus, the cheese is now marketed at the wholesale market price and nets the factory one cent per lb. less than this price at the factory. The plan practically secures to the factory the margin between the jobbers' buying price and the wholesalers' selling price, which in the last few months has ranged from two to three and one-half cents. Another decided advantage is that the wholesalers' selling price is much less subject to fluctuation than is the jobbers' buying price. A large amount of the local cheese trade prefers a cheese of mild flavor, that is, four to six weeks of age, so that the problem of long storage is negligible. A careful survey of Yakima valley groceries and markets appears to warrant the assumption that the whole output can be sold locally for some time to come.

Twenty-nine farms were visited during the week ending November 10 and 13 calls for assistance were answered.

There are indications that the Yakima Valley Stock men will have another outbreak of rabies to watch this winter. Several cases of rabies have been reported from Kootenai County this fall and a dog's head was sent to the State College from the Tieton this week, which was found to be diseased. The Forest Service has had a number of hunters and trappers on the range during the past year and there is no doubt need of this work to be continued.

The interest in better dairy cows continues. Assistance was given this week in selecting a pure bred Holstein cow and two grades. There are at present two other farmers who desire to trade beef cows for dairy cows and several others who are in the market for good dairy stock.

Twenty-eight farms were visited during the week ending November 24, seven calls for assistance were answered, and five office conferences were held.

The campaign begun a few weeks ago to secure the entire utilization of apple pomace from the local fruit juice and vinegar plants has been successful. At present, the daily demand for pomace for feeding dairy cattle, sheep and hogs exceeds the supply. Results secured by feeding pomace to the dairy cows has been entirely satisfactory and it appears that there is very little, if any, difference between the value of fresh apple pomace and corn silage in milk production. The pomace is given to the farmers at the plants and the only cost is for hauling, which averages about twenty cents per ton-mile.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton (continued).

Several Tieton farmers have been engaged in the sheep business in a small way during the past one or two years. None of these has kept a definite record of cost and income, but all are enthusiastically in favor of keeping a few sheep, particularly to clean up ditch banks, fence rows and orchard waste. The interest in sheep raising is increasing slowly and several new flocks will undoubtedly be added to the project this fall.

Nine farms were visited during the week ending December 1, eleven calls for assistance were answered, and eleven office conferences were held.

A trip was made with Messrs. Elliott and Levine to Toppenish on the Yakima Indian reservation, where Mr. Levine bought three grade Holstein heifers for \$155.00. A trip was also made to Mr. White's Duroc-Jersey farm on the Sunnyside project with two farmers for the purpose of buying breeding stock. Mr. White's herd, however, has been so entirely picked over this season that no selections were made.

Mr. Eakin is having evident success in feeding cooked sugar beets mixed with grain to fattening pigs. The beets are cooked in water until they are quite soft and the water is thick and of a syrupy consistency. The mixture is eaten with great relish and the gains seem to be satisfactory. While the amount of beets fed has been too small to secure accurate data as to their value it is evident that cull beets can be profitably disposed of in this manner.

The first heavy snow storm of the season occurred this week and stopped, temporarily at least, the farm work which has progressed under favorable weather conditions up to the present time.

Shoshone.

During the week ending December 8, a cooperative shipment was made of one car of 28 cattle, 5 farmers cooperating. As no one here could be secured to go to Omaha with the cattle, Mr. Magruder went with them to Billings and secured a man there to go with them. The cattle were weighed in Billings just after they were unloaded and again when they were filled, to see how much the fill would be there and how much the shrink would be from Billings to Omaha. The fill in Billings was 625 pounds.

During the week ending December 15, an article was written for the local papers, discussing the importance of good shelter for livestock, for lowering the death loss, saving feed and making the labor more convenient and agreeable.

The Great Western Sugar Company has reported that sugar beet pulp is now for sale to those who have not grown beets, a quantity having been left unused by the beet growers.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Shoshone (continued).

A cooperative shipment was made to Omaha of one car of 26 cattle, 9 farmers cooperating. The car was loaded at Powell at 8:30 A. M. the 13th and was unloaded at the Billings yard at 10:00 A. M. the next day. The weather was favorable when the cattle were unloaded but it had been storming almost all of the time since they had been loaded. They weighed 25,700 pounds before they were filled and 1,200 pounds more at 5:00 P. M. after they were filled. This was a larger fill than that of the previous car, due probably to a longer time of filling and to a greater shrink before the fill.

Through this office, several farmers arranged to apply for sheep range on the Forest Reserve range.

Saturday afternoon, 20 farmers met in this office and organized a potato growers' association. Their main purpose is to get some distributing company to handle their potatoes for them.

Truckee-Carson.

Some time during the week ending December 8 has been devoted to the cooperative shipment of hogs to the Nevada Packing Company at Reno. The shipment left Fallon at 4:00 P. M. on Wednesday, accompanied by one of the shippers and Mr. Cline, and was weighed out at Reno 8:00 A. M. Thursday. The shipping expense, including feed, time and expense of caretaker, freight and weighing, amounted to \$0.406 per hundred pounds. The shrinkage was in the neighborhood of 5%. The selling price was 15-1/2¢ for prime hogs weighing 150 to 300 pounds; 15¢ for hogs weighing above 300 pounds; and 13¢ for hogs weighing less than 150 pounds. Nine farmers participated in the shipment.

In these cooperative shipments the shipping expense per hundred pounds is deducted from each shipper's account and a check for the net amount is forwarded to the individual shippers from the packing firm. The next cooperative shipment will take place in about two weeks.

While at Reno Friday and Saturday a conference was attended of Extension men of the State, principally county agents. Since the county agents of Nevada are all emergency men and the counties are not cooperating as yet, considerable time of the meeting was devoted to county farm bureau organizations, with the hope that in time county agent work in the state will be financed and given other support by counties, the same as in other states.

For the week ending December 15, there were received thirty-nine calls for assistance and nine visits were made to farms.

On November 20, a bunch of one hundred hogs were put on a ration of wet beet pulp, beet sugar molasses and grain of the following proportions: beet pulp, 10 parts; beet sugar molasses, 5 parts;

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Truckee-Carson (continued).

grain, 3 parts. This feeding test was intended to follow much the same methods as were used in a feeding trial at Utah Experiment Station in 1904.

The Utah Station reported a percentage daily gain of 1.7%. It was not convenient to weigh the entire lot of hogs in this local feeding trial, nor was the feed accurately weighed because of the very large bulk used. Ten representative hogs were selected and marked and weighed in order that some idea of the rates of gain might be secured. On November 28, nine of the hogs weighed 1398 pounds. On December 11, the same hogs weighed 1623 pounds, or a gain of 225 pounds in thirteen days, a percentage daily gain of 1.25%. One large sow weighing 355 pounds on November 28, made a gain of 30 pounds in thirteen days, or a percentage daily gain of .64%. The gains as shown by the large sow illustrate very clearly the inefficiency of large hogs to make fast and economical gains in proportion to weight. It was intended that only shorts would be fed in connection with the beet pulp and beet molasses, but during the thirteen days of the feeding period mentioned here, shorts were available only about one-third of the time. It was necessary to substitute whole barley for the remainder of the time. In feeding the whole barley, it was mixed with the wet beet pulp and allowed to stand two or three days with the expectation that the barley would soften and be more easily digested. This method, however, did not prove as satisfactory as was expected. The wet beet pulp and the molasses made such a palatable and easily eaten feed that the hogs ate very greedily and failed to chew the barley which passed through largely undigested. The hogs ate great quantities of this feed and no ill effects were experienced. It is evident that if finely ground feed had been used with the beet pulp and beet molasses very satisfactory and economical gains would have been secured.

Boise.

Meetings have been held every day or night the week ending December 15, except Monday. At most of these, Mr. Musser has talked County Farm Bureau reorganization. Sheep slides have been used and the hog increase program has been discussed.

Most of the farm visits have been in connection with the swine production program or hay marketing. Two herds of calves were vaccinated and four herds of cows tested for butterfat.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

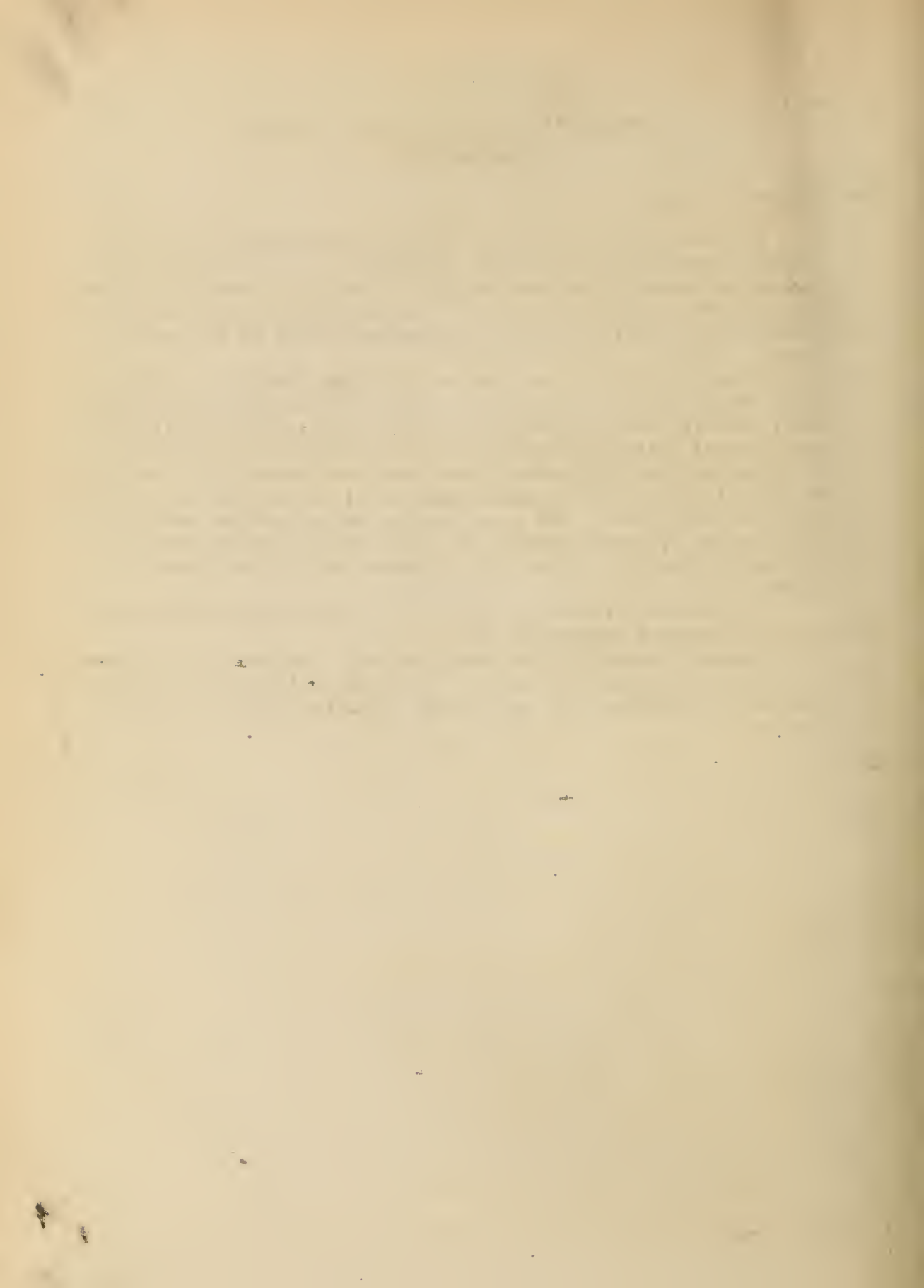
Uncompahgre.

The most of the week ending December 15 was taken up with the farmers' institute and corn show at Olathe. A great deal of interest was shown in the corn display. Nearly 60 entries of splendid corn were brought in. One of the most serious criticisms to be given was that there was not a uniformity of type in the exhibits made.

In connection with the show an institute program was given in which the following speakers took part: Messrs. Ellington, Western Dairy Officer; Nevius, County Agent of Montrose County; Dwilbiss, County Agent Delta County; Special Agent Wakelind at work on alfalfa weevil control; Eggleston, State pure seed expert; and Lindgren of this office. The programs consisted of topics that were of interest at this time. Two stock judging demonstrations were given, in which Mr. Ellington handled the dairy cattle, and Mr. Solomon, a local hog breeder, judged hogs. These created considerable interest.

The first afternoon was taken up in a farm tour in which four farms of interest were visited.

The main feature of the corn show was a demonstration in seed selection and germination tests. This was handled by Mr. Wilson, teacher of agriculture in the schools, who also acted as judge of exhibits.



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1891

Received of the Treasurer of the

Board of Directors

the sum of \$100.00

for the year 1891

and for the year 1892

the sum of \$100.00

for the year 1893

and for the year 1894

the sum of \$100.00

for the year 1895

1891

1892

1893

1894

1895

1896

1897

1898

1899

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